



PIONEER®
The future of sound and vision.

Service Manual

ORDER NO.
ARP1985

STEREO CASSETTE TAPE DECK RECEIVER

RX-1220 KU

- Refer to the service manual ARP1788, RX-722/KU and RX-522/KU types.
- This manual is applicable to the RX-1220/KU type.

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

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CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

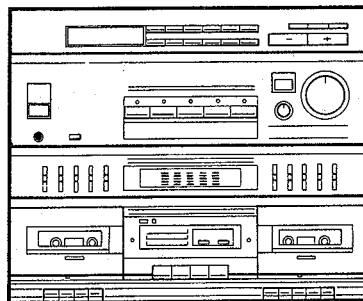
The RX-1220/KU type is the same as the RX-722/KU type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		RX-722/KU type	RX-1220/KU type	
$\triangle$	T1 Power transformer	ATS1196	ATS1197	
	Button (FUNCTION)	AAD1577	AAD1760	
	Button (BAND)	AAD1579	AAD1759	
	Button (COPY)	AAD1576	AAD1761	
	Button (STATION)	AAD1578	AAD1574	
	Power panel	AAK1727	AAK1675	
	Deck center panel A	AAK1728	AAK1942	
	Deck center panel B	AAK1729	AAK1946	
	Spectrum analyzer panel A	AAK1730	AAK1948	
	Spectrum analyzer panel B	AAK1731	AAK1951	
	Door panel L	AAK1732	AAK1697	
	Door panel R	AAK1733	AAK1698	
	Tuner display panel	AAK1734	AAK1952	
	Function panel	AAK1735	AAK1684	
	Door R	AAN1131	AAN1207	
	Door L	AAN1132	AAN1208	
	Front panel	AMB1503	AMB1658	
	Packing case	AHD1647	AHD1847	
	Operating instructions (English)	ARB1179	ARB1242	
	Remote control unit	AXD1048	AXD1140	

Service Manual



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ORDER NO.
ARP1788

STEREO CASSETTE TAPE DECK RECEIVER

RX-722

RX-522

- This manual is applicable to the RX-722/KU and RX-522/KU types.

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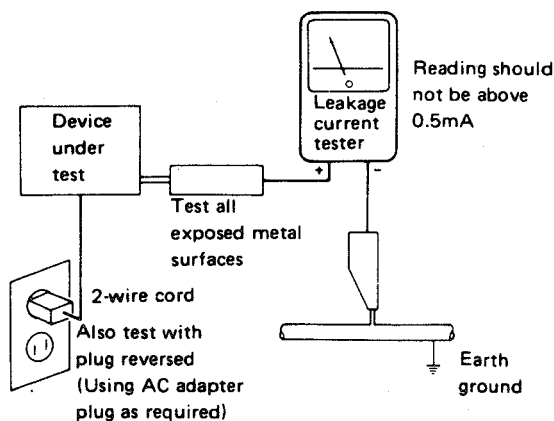
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

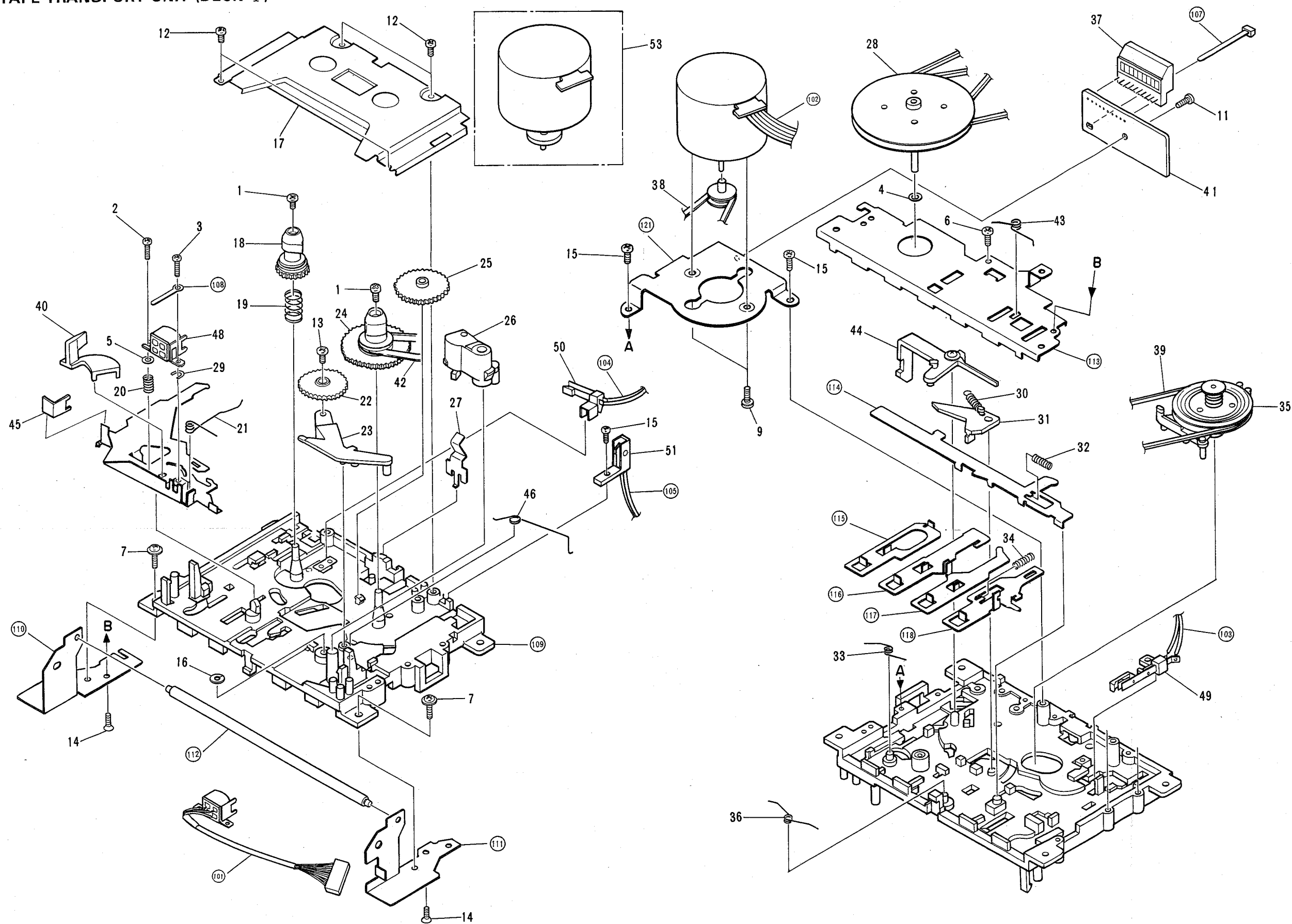
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

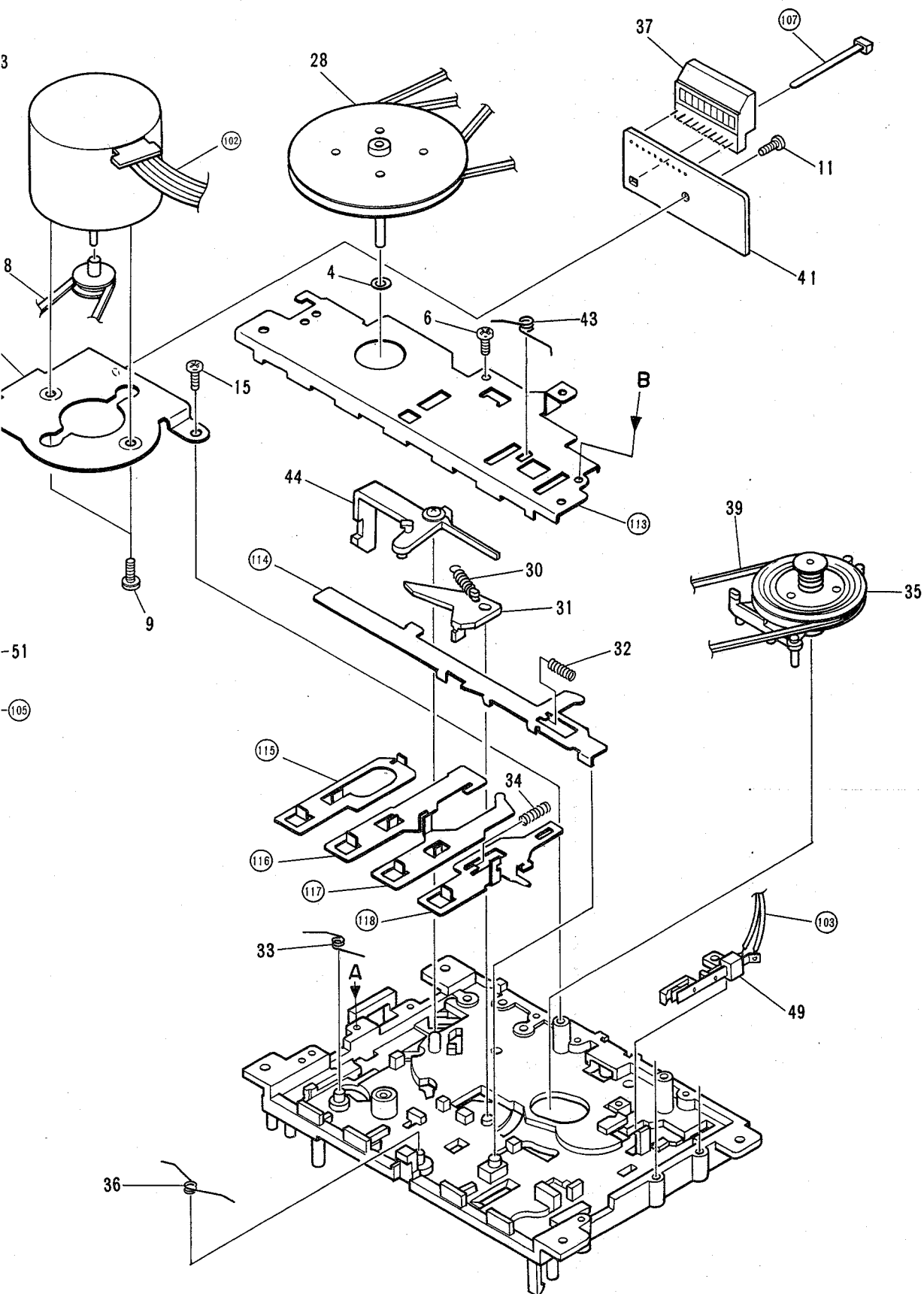
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2.2 TAPE TRANSPORT UNIT (DECK I)



Parts list
Mark No



Parts list of Tape transport unit (DECK I)

Mark	No.	Parts No.	Description
A	1	AZB1165	Bush D
	2	AZB1166	N screw
	3	AZB1167	P screw
	4	AZB1168	P washer
	5	AZB1169	F washer
	6	AZB1170	Bush C
	7	AZB1171	D screw
	8	.....	.....
	9	AZB1173	P screw
	10	.....	.....
B	11	AZB1176	D screw
	12	AZB1183	L screw
	13	AZB1184	Bush
	14	AZB1190	L screw
	15	AZB1191	L screw
	16	AZB1194	N washer
	17	AZN1902	Mechanism cover
	18	AZN1480	S reel
	19	AZN1481	C spring
	20	AZN1482	Azimuth C spring
C	21	AZN1483	Pinch arm spring
	22	AZN1484	Idler gear
	23	AZN1485	Idler arm
	24	AZN1486	T reel assembly
	25	AZN1487	F gear
	26	AZN1488	Pinch arm assembly
	27	AZN1489	Cassette spring
	28	AZN1491	FW assembly W
	29	AZN1494	Spacer C
	30	AZN1498	T spring
D	31	AZN1499	S arm
	32	AZN1500	C spring
	33	AZN1501	Spring
	34	AZN1502	C spring
	35	AZN1503	Power arm assembly
	36	AZN1504	Spring
	37	AZN1901	Connector
	38	AZN1506	Belt
	39	AZN1507	Belt
	40	AZN1508	Tape sensor
	41	AZN1571	Main PCB
	42	AZN1899	Counter belt
	43	AZN1752	Spring
	44	AZN1753	Eject arm
	45	AZN1900	Tape guide

Mark	No.	Parts No.	Description
	46	AZN1922	Spring
	47	.....	.....
	48	AZP1036	R/P head
	49	AZS1059	Leaf switch (MOTOR)
	50	AZS1060	Leaf switch (MUTE)
	51	AZS1061	Leaf switch (CrO2)
	52	.....	.....
	53	AZX1021	Motor assembly
	101	.....	Connector assembly
	102	.....	Jumper wire
	103	.....	Lead wire
	104	.....	Lead wire
	105	.....	Lead wire
	106	.....	.....
	107	.....	Nylon band
	108	.....	Lug plate
	109	.....	Chassis assembly
	110	.....	Holder button
	111	.....	Holder button R
	112	.....	Shaft
	113	.....	Back plate
	114	.....	Function lever
	115	.....	SE lever
	116	.....	FF lever
	117	.....	REW lever
	118	.....	PLAY lever
	119	.....	.....
	120	.....	.....
	121	.....	Motor bracket
	122	.....	.....
	123	.....	Head base B

2. EXPLODED VIEWS AND PARTS LIST

NOTES:

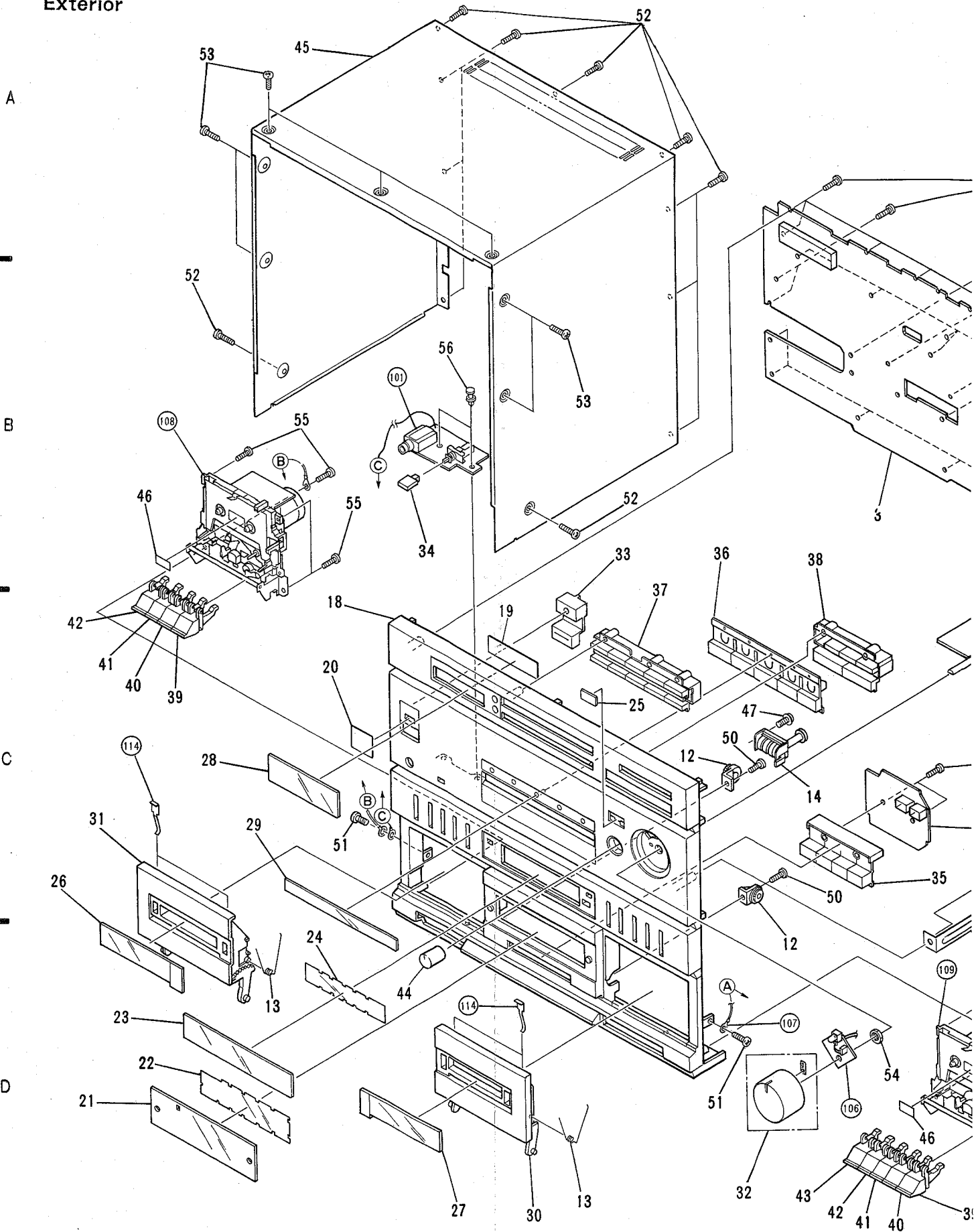
- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

2.1 EXTERIOR

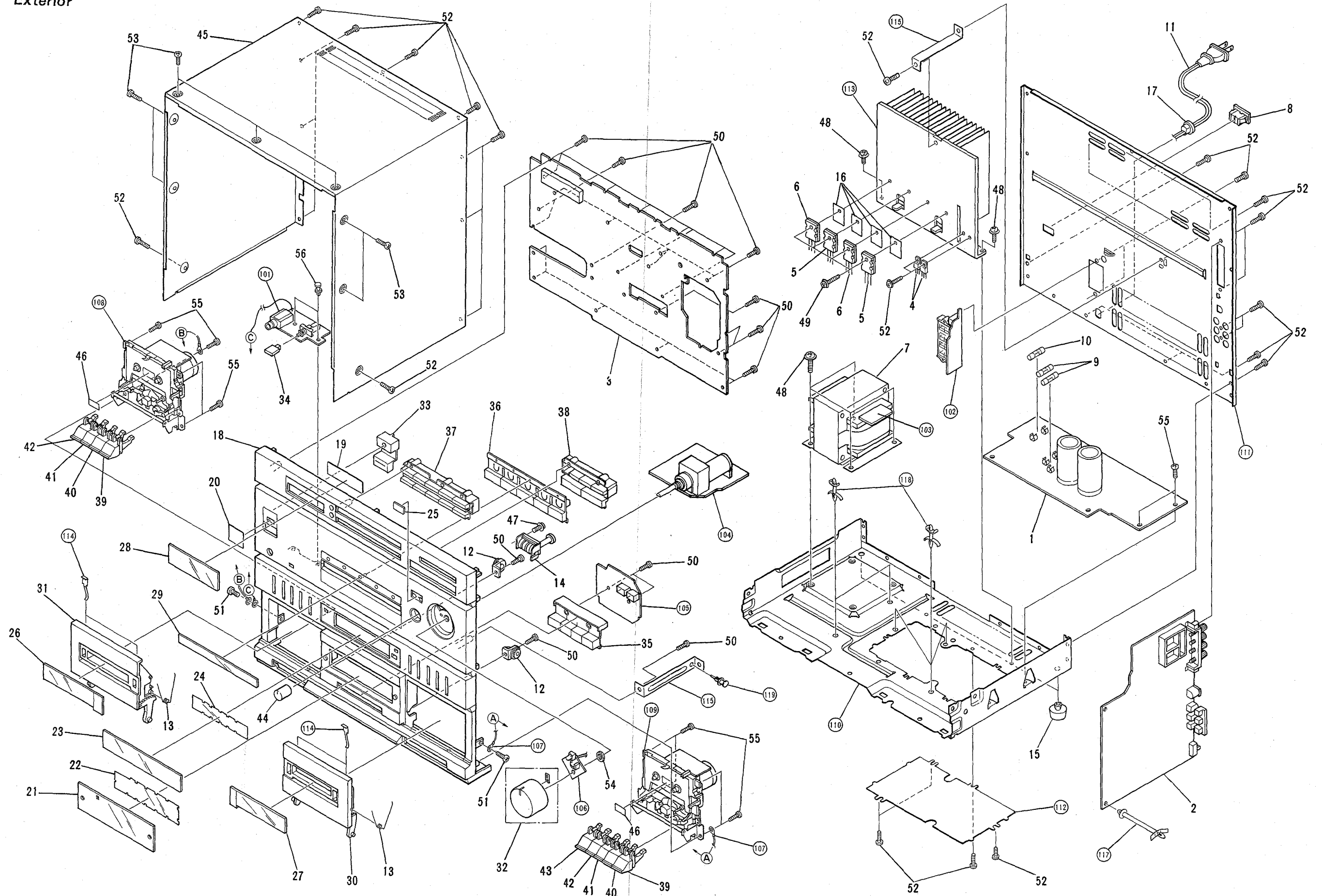
Parts list of Exterior

Mark	No.	Parts No.	Description	Mark	No.	Parts No.	Description
	1	AWZ2288	Power assembly		38	AAD1579	Button (BAND)
	2	AWZ2292	Complex assembly		39	AAE1119	Button (DECK)
	3	AWZ2294	Control assembly		40	AAE1120	Button (DECK)
Δ	4	NJM7812FA	Regulator IC (IC701,IC702)		41	AAE1121	Button (DECK)
Δ	5	2SA1302	Transistor (Q3,Q4)		42	AAE1122	Button (DECK)
Δ	6	2SC3281	Transistor (Q1,Q2)		43	AAE1123	Button (DECK)
Δ	7	ATS1196	Power transformer (RX-722 type)		44	RAC1211	VR knob B
		ATS1197	Power transformer(RX-522 type)		45	ANE1179	Bonnet case
Δ	8	AKP1015	AC socket (1P OUTLET)		46	AAX1301	Remain display sheet
Δ	9	AEK-122	Fuse (2A/125V,FU2,FU3)		47	ABA1005	Screw
Δ	10	AEK-309	Fuse (6.3A/125V,FU1)		48	ABA1021	Screw (3×10)
					49	ABA1037	Screw (3×14)
Δ	11	ADG1033	AC Power cord		50	BBZ26P080FMC	Screw
	12	AXA1004	Damper assembly		51	BBZ30P080FMC	Screw
	13	ABH1043	Door spring		52	BBZ30P080FZK	Screw
	14	AAW1008	Counter		53	BPZ30P100FZK	Screw
	15	AEC-784	Leg assembly		54	NK90FUC	Nut
					55	VPZ30P080FMC	Screw
	16	AEE1014	Mica sheet		56	AMR1066	Plastic revet
	17	AEP-113	Strain relief		101		Head phone assembly
	18	AMB1503	Front panel (RX-722 type)		102		SP Out assembly
		AMB1504	Front panel (RX-522 type)		103		Connect assembly
	19	AAK1227	FL filter		104		Main VR assembly
	20	AAK1727	Power panel		105		Deck SW assembly
					106		VR LED assembly
	21	AAK1728	Deck center panel A		107		Earth lead
	22	AAK1729	Deck center panel B		108		Tape transport unit (DECK I)
	23	AAK1730	Spectrum analyzer panel A		109		Tape transport unit (DECK II)
	24	AAK1731	Spectrum analyzer panel B				
	25	AAK1680	IR filter		110		Chassis
					111		Rear panel
	26	AAK1732	Door panel L		112		Bottom plate
	27	AAK1733	Door panel R		113		Heat sink
	28	AAK1734	Tuner display panel		114		Keep plate
	29	AAK1735	Function panel				
	30	AAN1131	Door R		115		PCB Heat sink holder
					116		Binder
	31	AAN1132	Door L		117		PC suport
	32	AAB1102	Rotary knob assembly		118		Spacer
	33	AAD1336	Button (POWER)		119		Pin grommet
	34	AAD1544	Push button				
	35	AAD1576	Button (COPY)				
	36	AAD1577	Button (FUNCTION)				
	37	AAD1578	Button (STATION)				

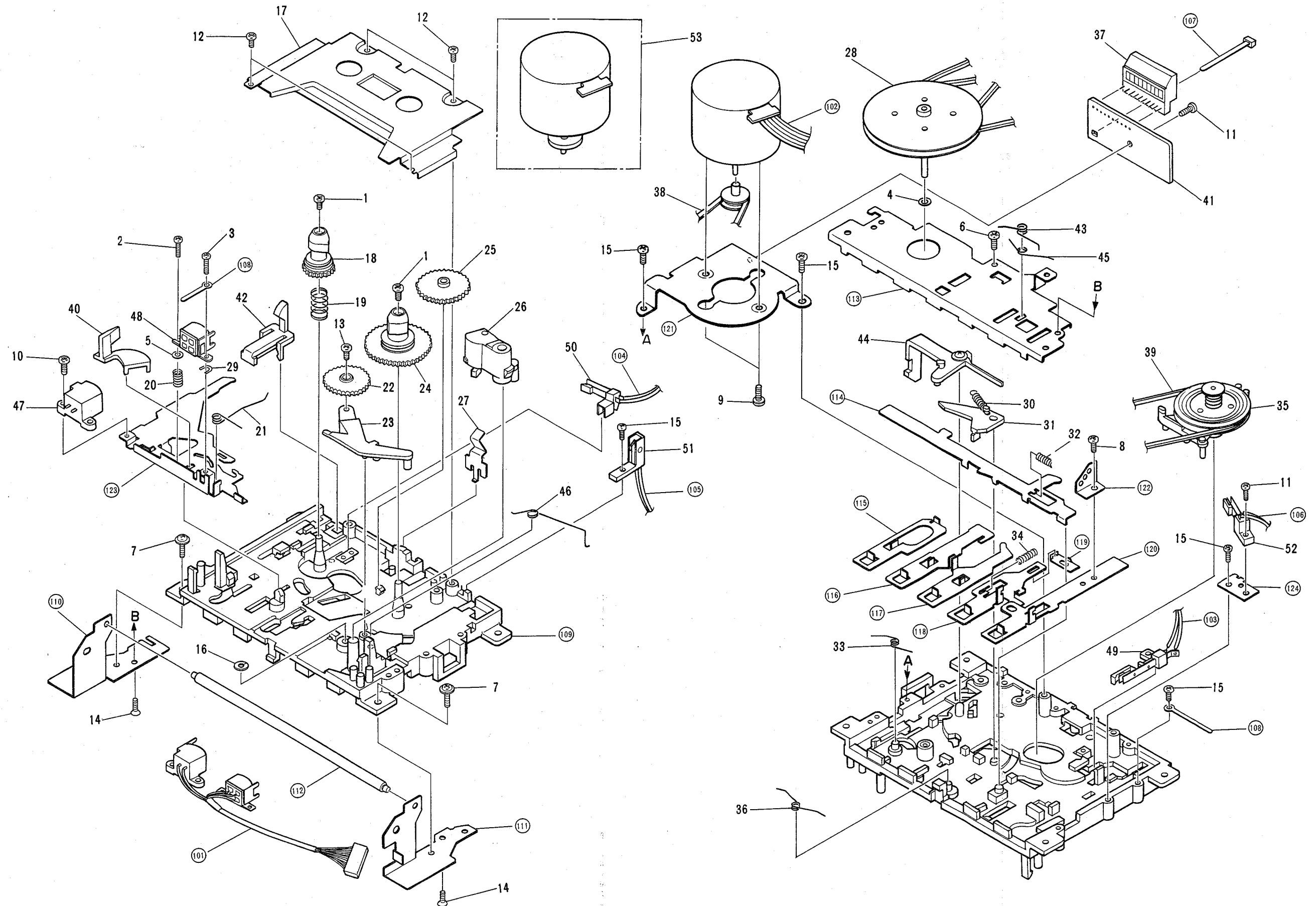
Exterior



Exterior



2.3 TAPE TRANSPORT UNIT (DECK II)



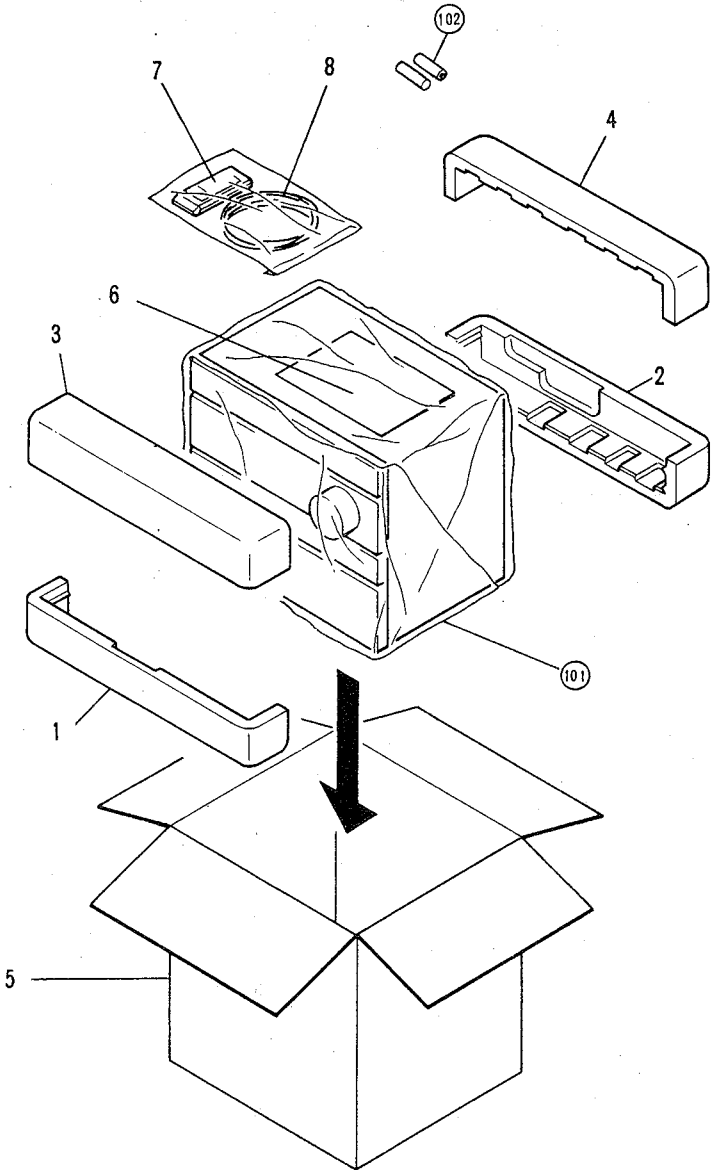
Parts list of Tape transport unit (DECK II)

	Mark	No.	Parts No.	Description	Mark	No.	Parts No.	Description
A		1	AZB1165	Bush D		51	AZS1061	Leaf switch (CrO2)
		2	AZB1166	N screw		52	AZS1062	Leaf switch (REC)
		3	AZB1167	P screw		53	AZX1021	Motor assembly
		4	AZB1168	P washer				
		5	AZB1169	F washer				
		6	AZB1170	Bush C				
		7	AZB1171	D screw		101		Connector assembly
		8	AZB1172	D screw		102		Jumper wire
		9	AZB1173	P screw		103		Lead wire
		10	AZB1175	D bind screw		104		Lead wire
						105		Lead wire
		11	AZB1176	D screw				
		12	AZB1183	L screw		106		Lead wire
		13	AZB1184	Bush		107		Nylon band
		14	AZB1190	L screw		108		Lug plate
B		15	AZB1191	L screw		109		Chassis assembly
						110		Holder button
		16	AZB1194	N washer				
		17	AZN1479	Mechanism cover		111		Holder button R
		18	AZN1480	S reel		112		Shaft
		19	AZN1481	C spring		113		Back plate
		20	AZN1482	Azimuth C spring		114		Function lever
						115		SE lever
		21	AZN1483	Pinch arm spring				
		22	AZN1484	Idler gear		116		FF lever
		23	AZN1485	Idler arm		117		REW lever
		24	AZN1486	T reel assembly		118		PLAY lever
		25	AZN1487	F gear		119		REC STOP lever
						120		REC lever
	C		26	AZN1488	Pinch arm assembly			
		27	AZN1489	Cassette spring		121		Motor bracket
		28	AZN1491	FW assembly W		122		RSW lever
		29	AZN1494	Spacer C		123		Head base B
		30	AZN1498	T spring		124		SW plate
		31	AZN1499	S arm				
		32	AZN1500	C spring				
		33	AZN1501	Spring				
		34	AZN1502	C spring				
		35	AZN1503	Power arm assembly				
		36	AZN1504	Spring				
		37	AZN1505	Connector				
		38	AZN1506	Belt				
D		39	AZN1507	Belt				
		40	AZN1508	Tape sensor				
		41	AZN1571	Main PCB				
		42	AZN1572	Interlock arm				
		43	AZN1752	Spring				
		44	AZN1753	Eject arm				
		45	AZN1903	Spring				
		46	AZN1922	Spring				
		47	AZP1025	E head				
		48	AZP1036	R/P head				
		49	AZS1059	Leaf switch (MOTOR)				
		50	AZS1060	Leaf switch (MUTE)				

3. PACKING

Parts list of Packing

Mark	No.	Parts No.	Description
	1	AHA1242	Front pad A
	2	AHA1243	Rear pad A
	3	AHA1244	Front pad B
	4	AHA1245	Rear pad B
	5	AHD1647	Packing case (RX-722 type)
		AHD1648	Packing case (RX-522 type)
	6	ARB1179	Operating instructions (English)
	7	AXD1048	Remote control unit
	8	AEA1007	Antenna set
	101		Sheet
	102		Battery



4. SCHEMATIC DIAGRAM

1. RESISTORS:
Indicated in Ω , $\frac{1}{4}W$, $\frac{1}{2}W$, $\frac{3}{4}W$, $1W$, 5% tolerance unless otherwise noted k: k Ω ,
M: M Ω , (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$ (M): $\pm 20\%$ tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p: pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
Signal voltage at () W + W 8 Ω output (1kHz)
DC voltage (V) at no input signal
Value in () is DC voltage at rated power.
mA: DC current at no input signal

4. OTHERS:

Signal route.

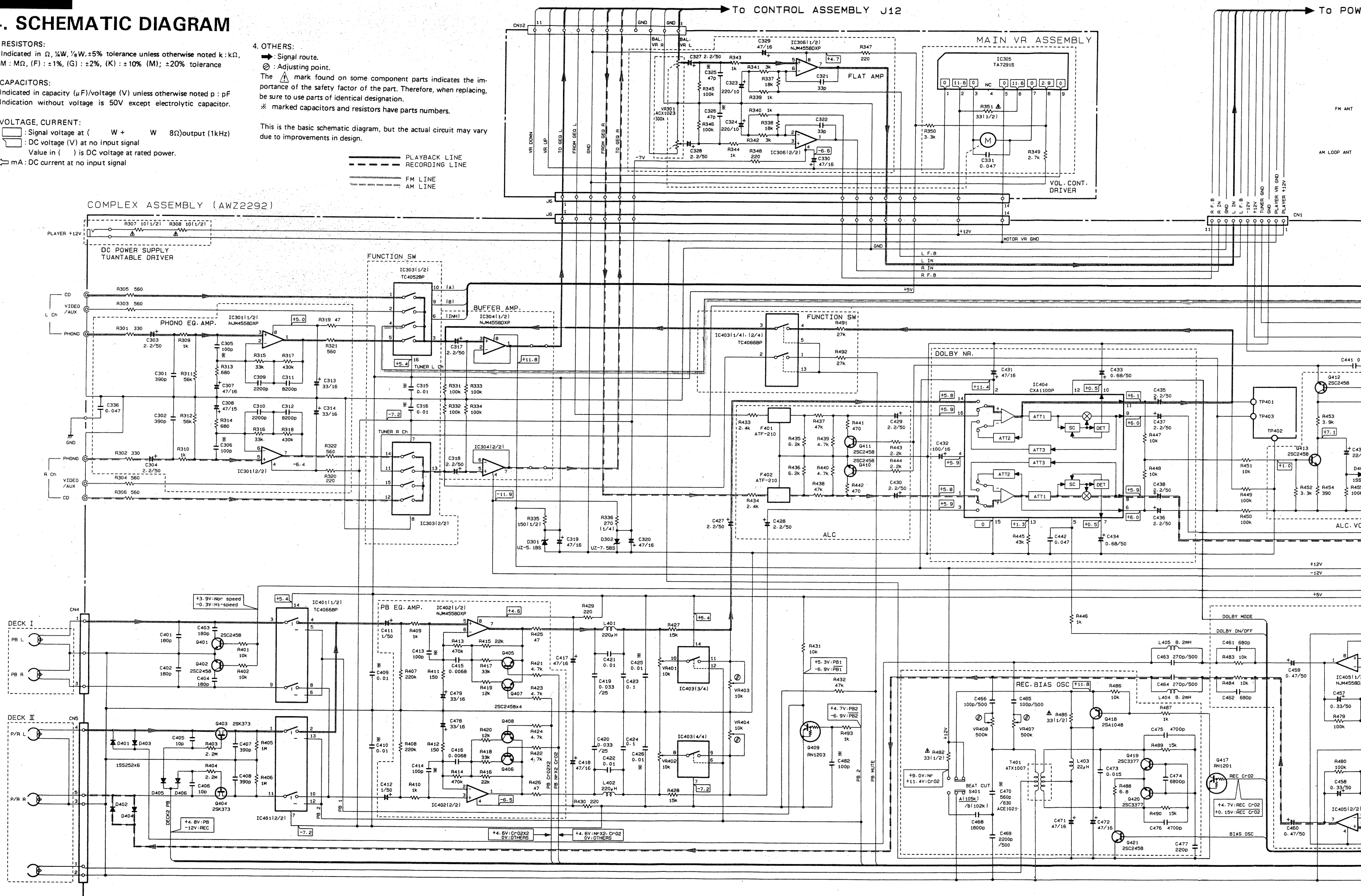
Adjusting point.

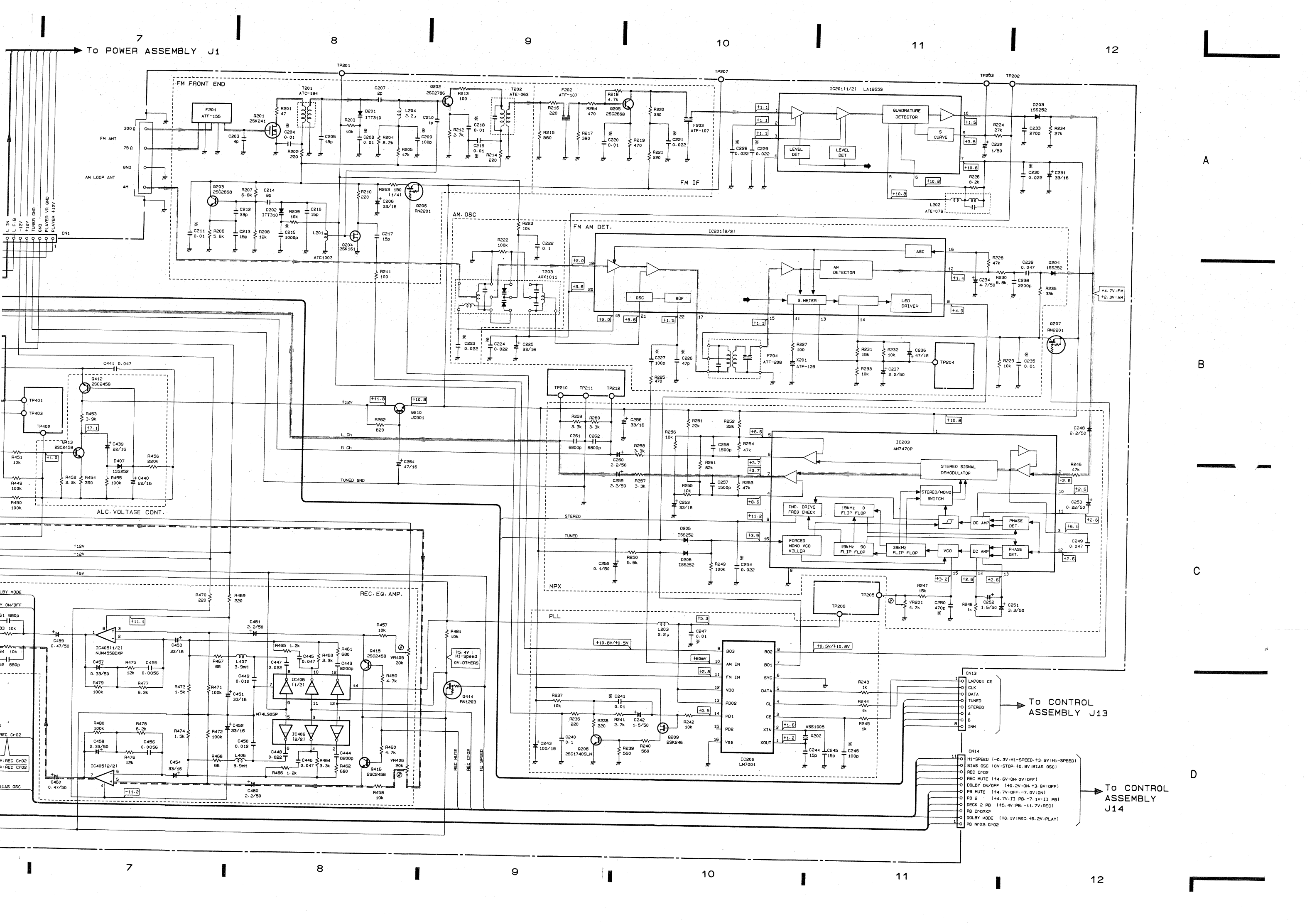
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

* marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

PLAYBACK LINE
RECORDING LINE
FM LINE
AM LINE



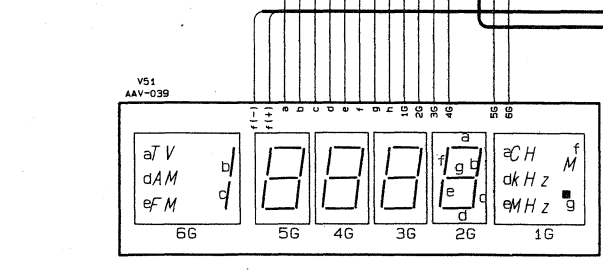
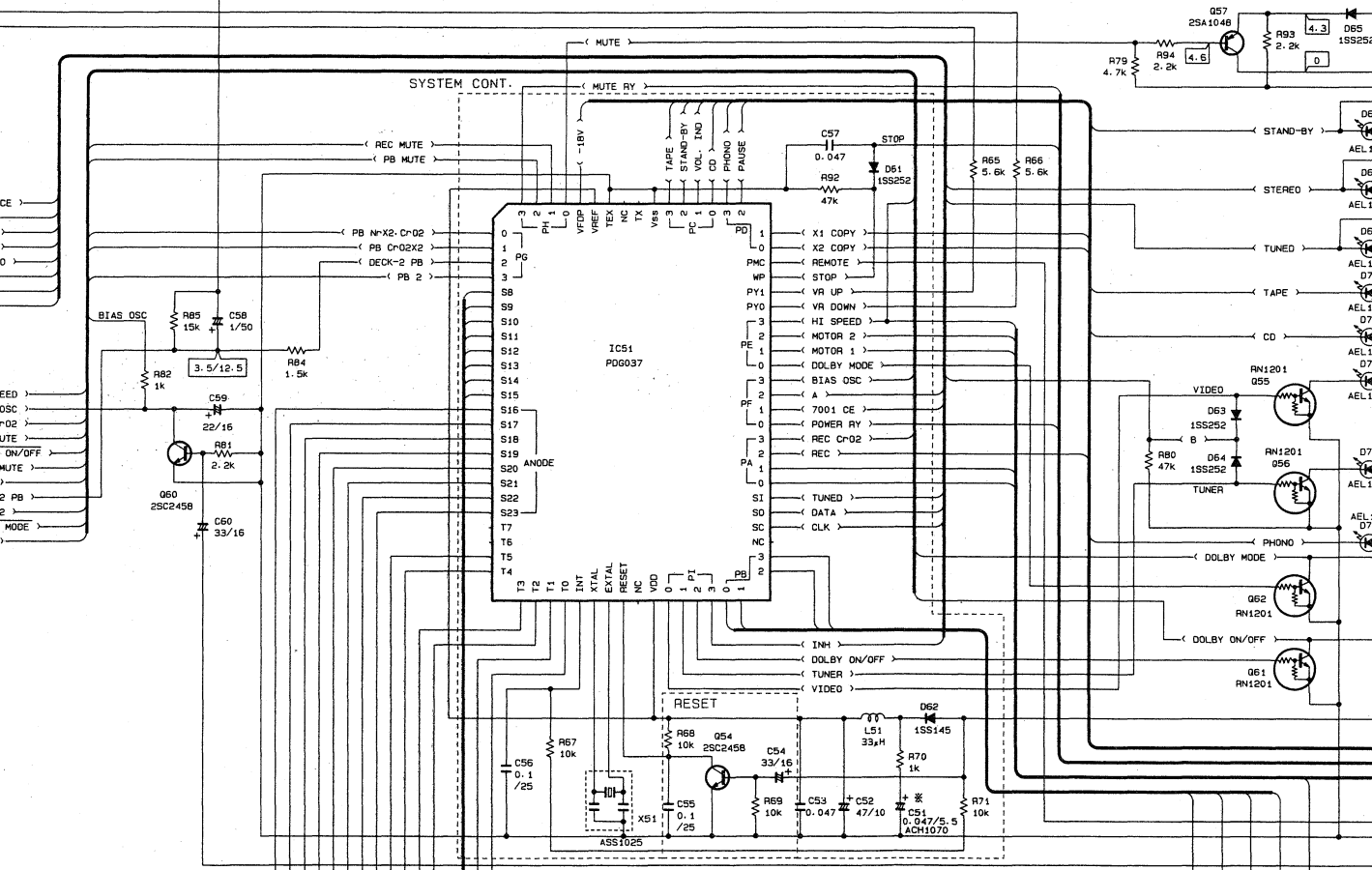
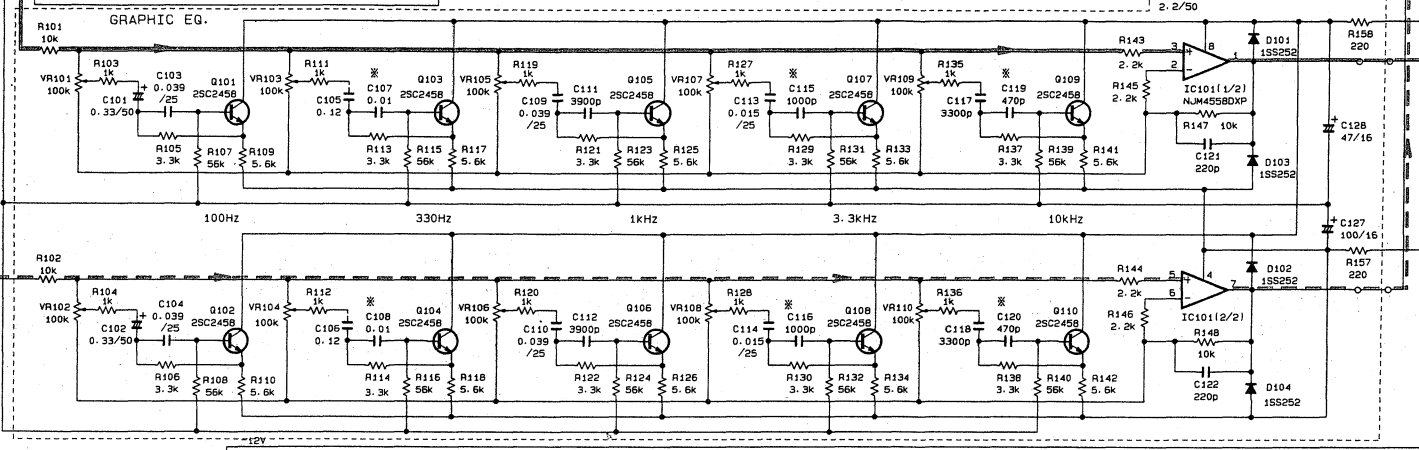
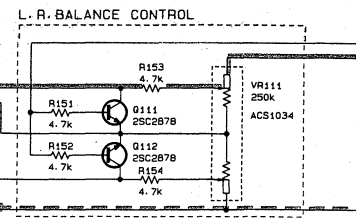


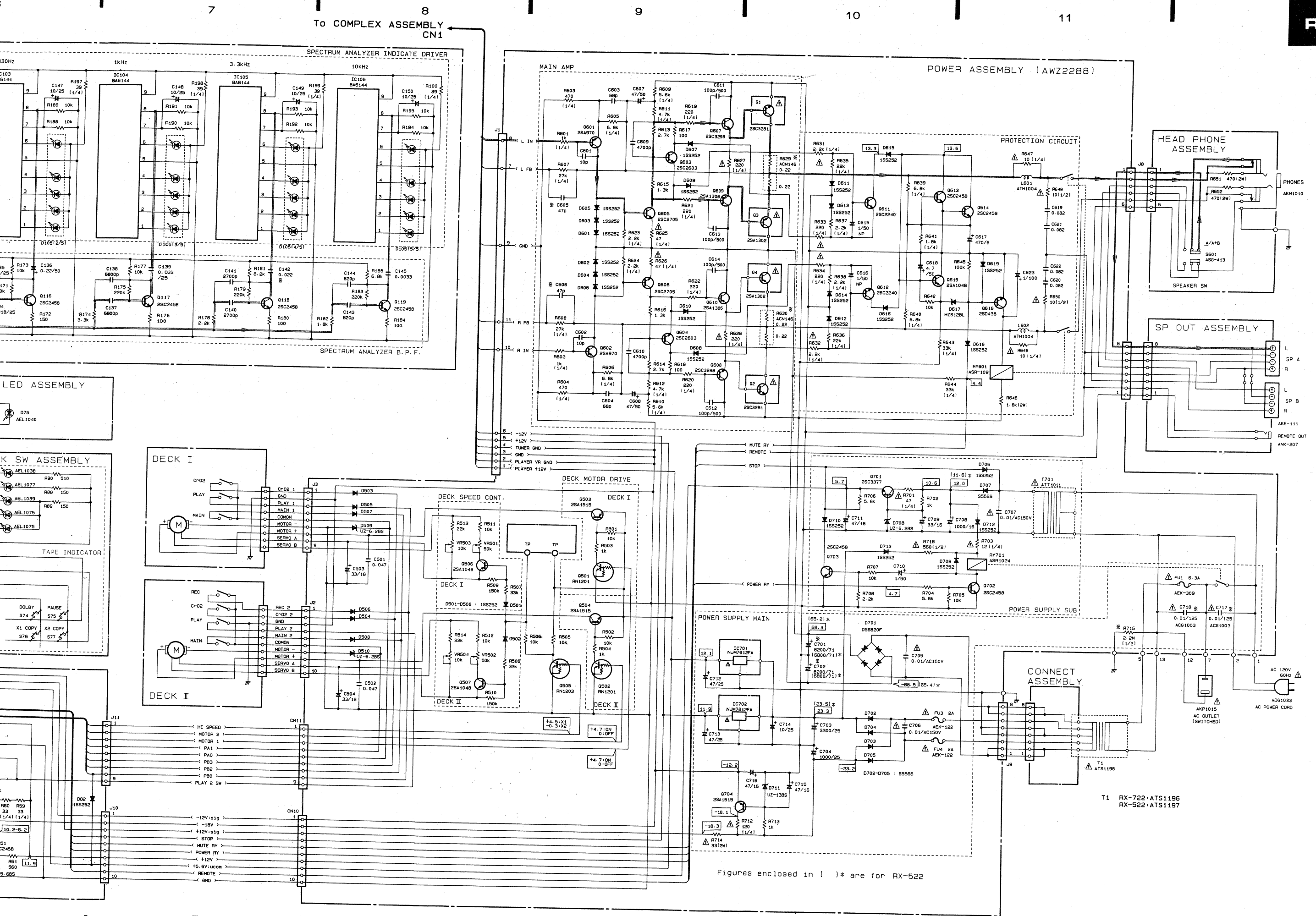
CONTROL ASSEMBLY (AWZ2294)

TO MAIN VR
ASSEMBLY
CN12

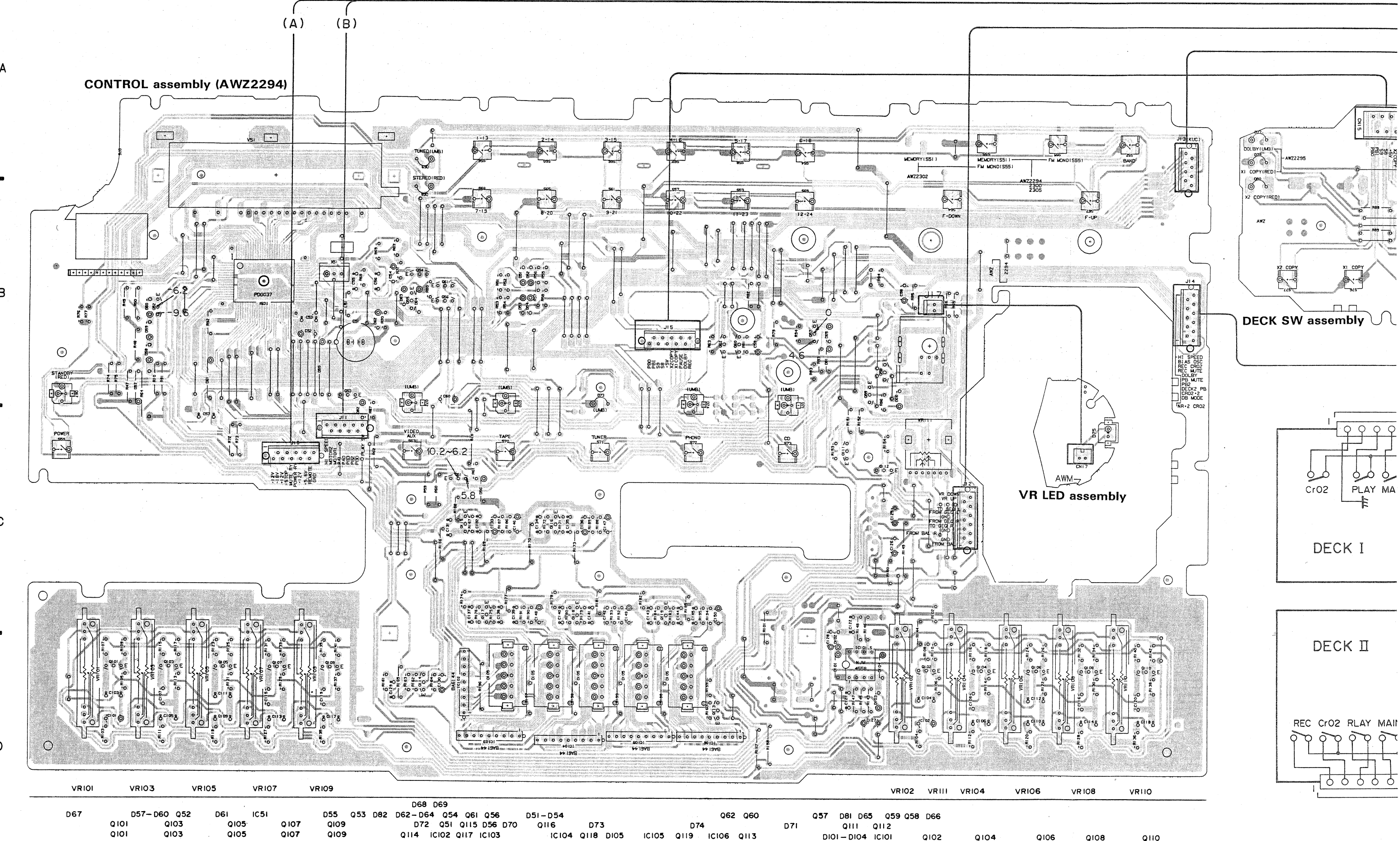
COMPLEX
ASSEMBLY
CN13

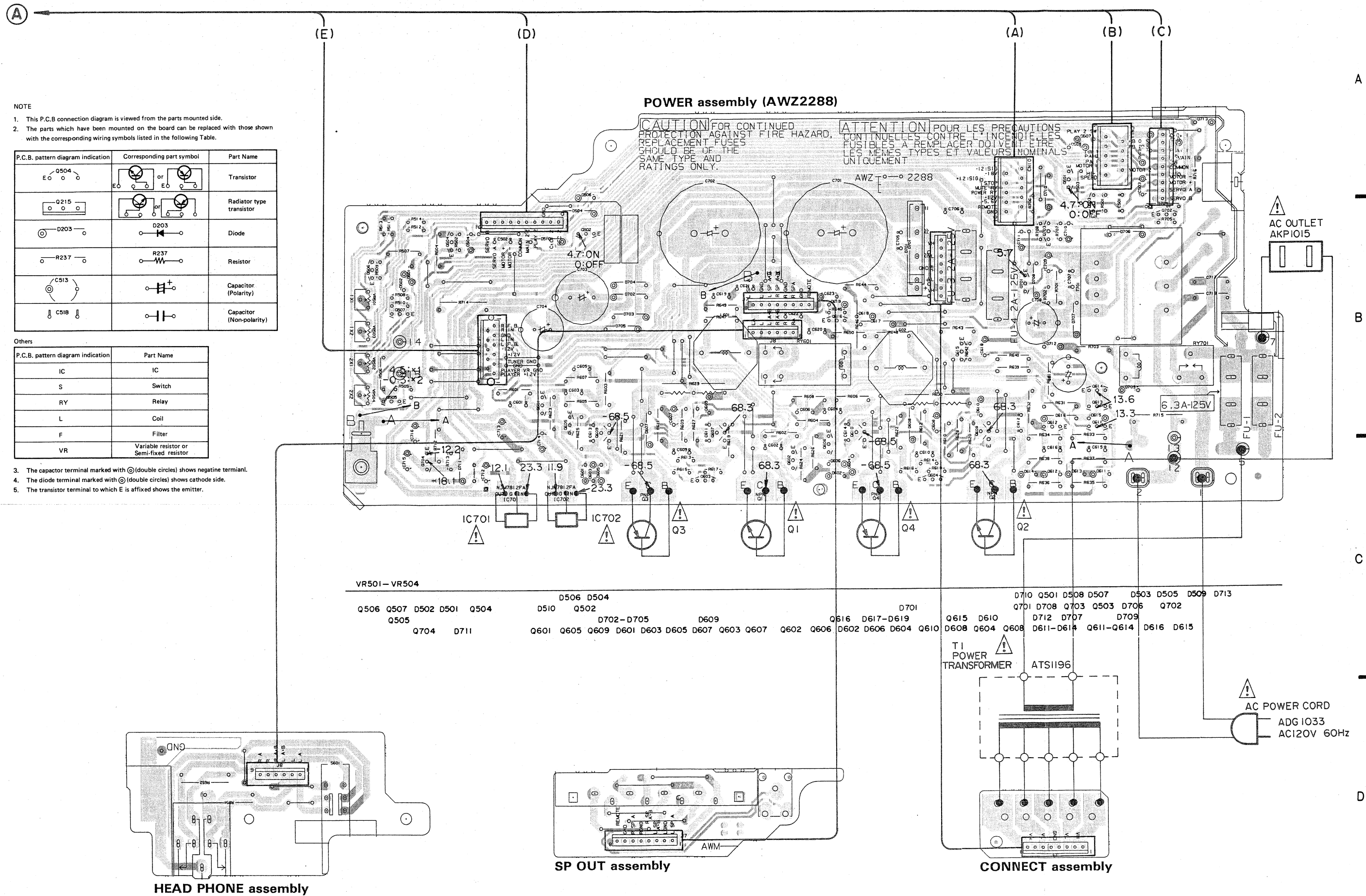
COMPLEX
ASSEMBLY
CN14

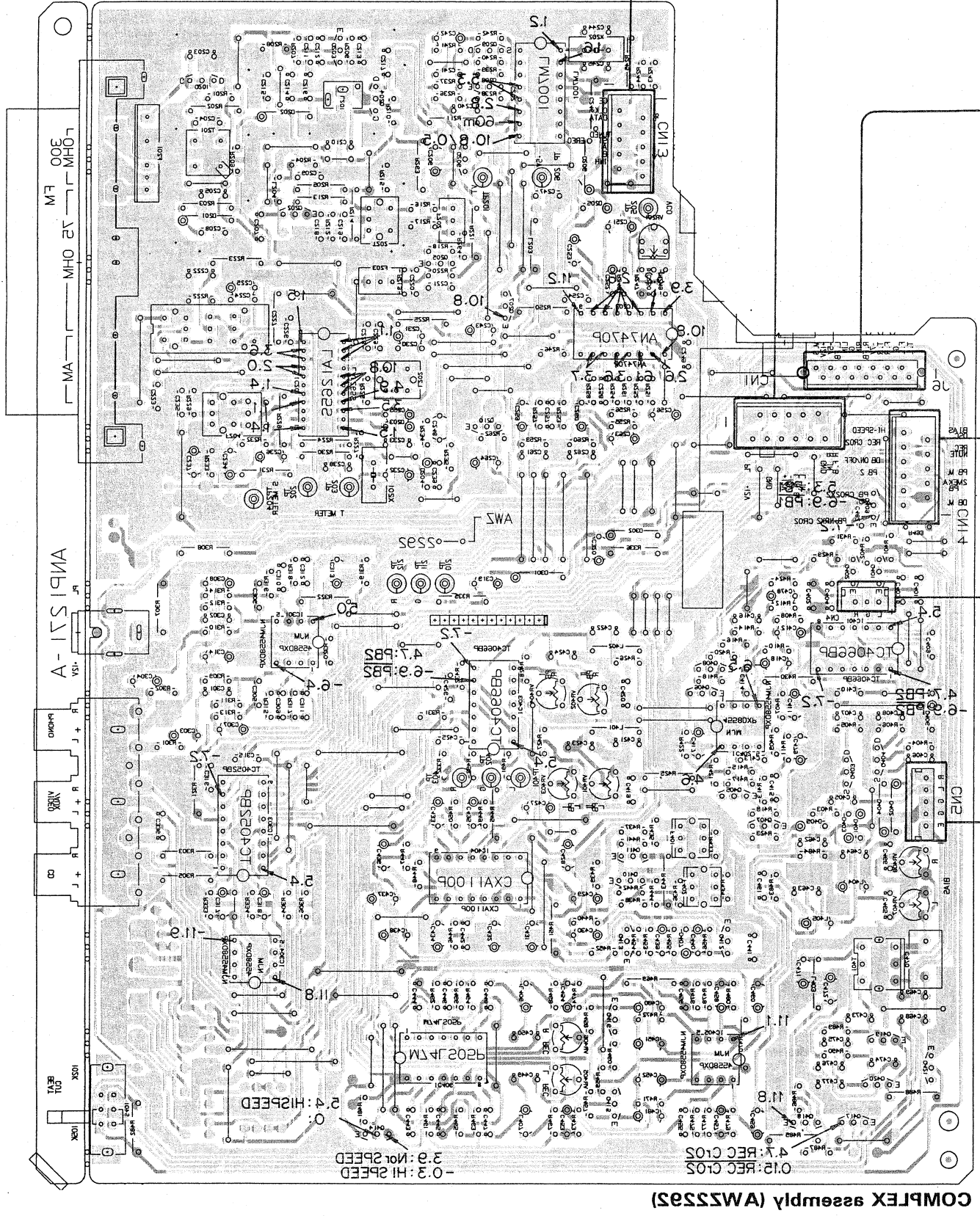
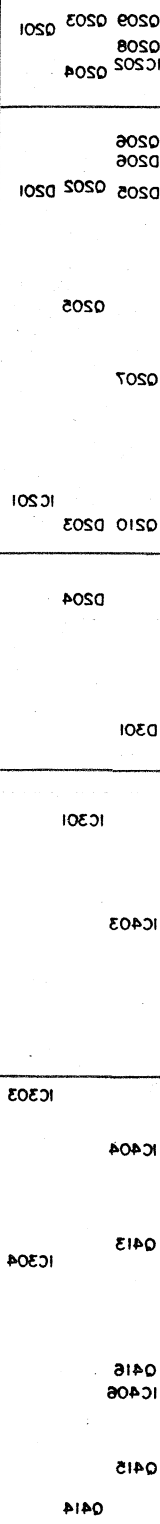
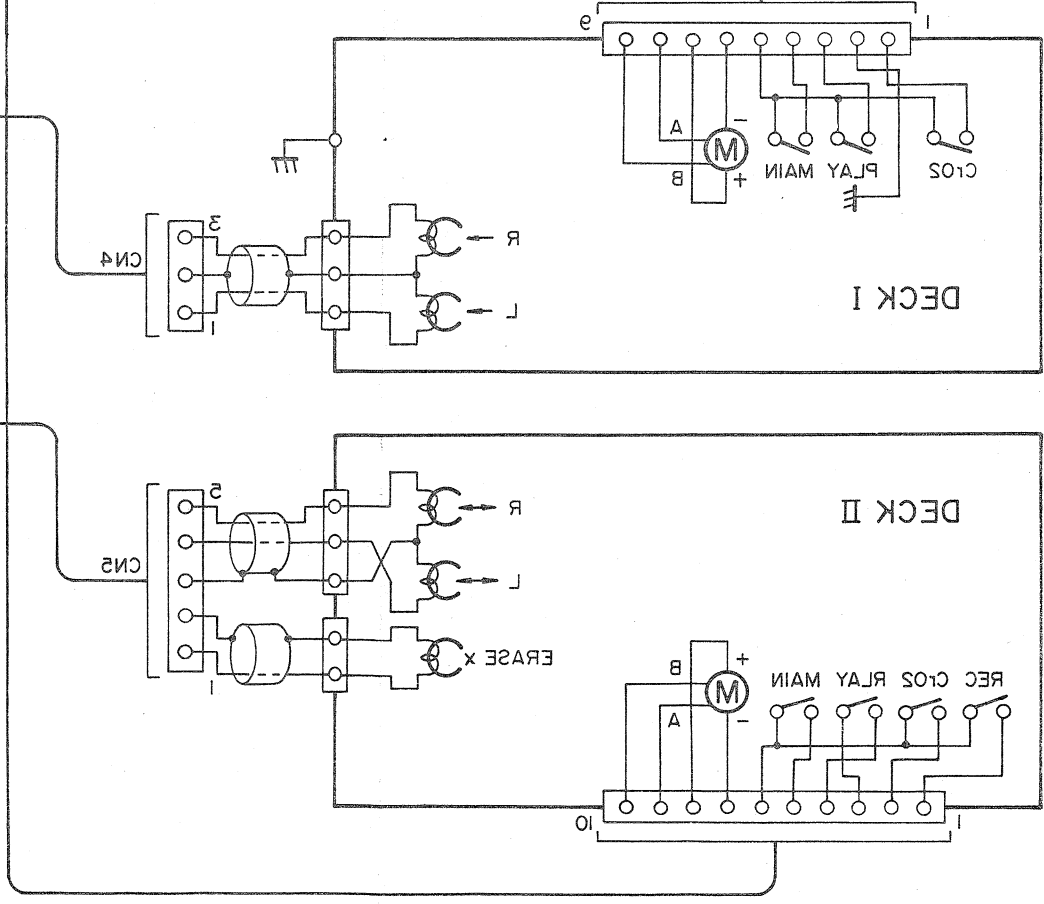
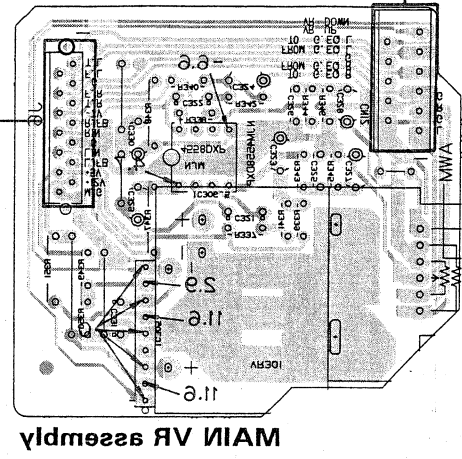
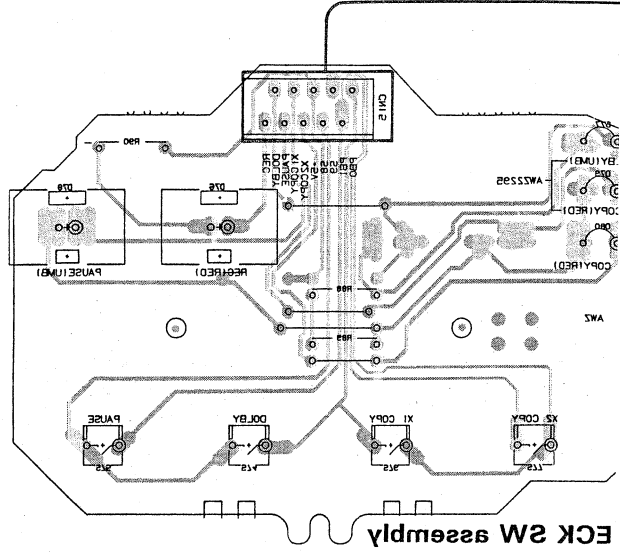


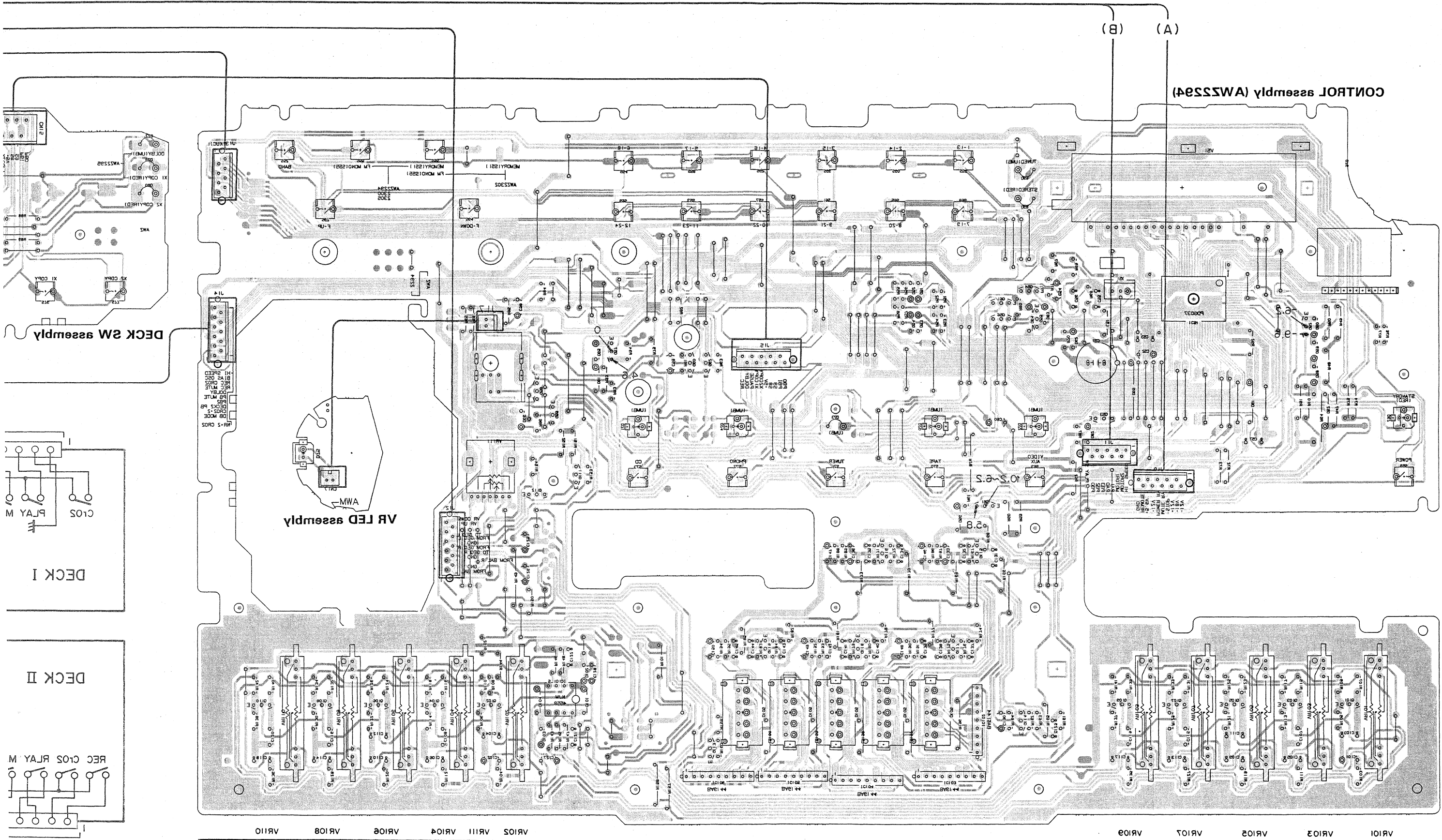


5. P.C.BOARDS CONNECTION DIAGRAM









A

B

C

D

6. ELECTRICAL PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10¹ 561.....RD1/4PS 5 6 1 J
 47kΩ 47 × 10³ 473.....RD1/4PS 4 7 3 J
 0.5Ω 0R5.....RN2H 0 5 K
 1Ω 010.....RS1P 0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621.....RN1/4SR 5 6 2 1 F

Miscellaneous parts

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Power assembly	AWZ2288
	Head phone assembly	
	SP Out assembly	
	Connect assembly	
	Complex assembly	AWZ2292
	Main VR assembly	
	Control assembly	AWZ2294
	DECK SW assembly	
	VR LED assembly	
	Pattern assembly	
⚠	IC701,IC702 Regulator IC	NJM7812FA
⚠	Q3,Q4 Transistor	2SA1302
⚠	Q1,Q2 Transistor	2SC3281
⚠	T1 Power transformer (AC120V)	ATS1196
⚠	AC Outlet (1P)	AKP1015
⚠	FU2,FU3 Small type fuse (2A/125V)	AEK-122
⚠	FU1 Fuse (6.3A/125V)	AEK-309
⚠	AC Power cord	ADG1033
	Strain relief	AEP-113
	Leaf switch (MOTOR)	AZN1509
	Leaf switch (MUTE)	AZS1060
	Leaf switch (CrO2)	AZS1061
	Leaf switch (REC)	AZS1062
	Motor assembly	AZX1021
	R/P Head	AZP1036
	E Head	AZP1025

POWER assembly (AWZ2288)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q501,Q502	RN1201
	Q505	RN1203
	Q506,Q507,Q615	2SA1048
	Q609,Q610	2SA1306
	Q503,Q504,Q704	2SA1515
	Q601,Q602	2SA970
	Q611,Q612	2SC2240
	Q613,Q614,Q702,Q703	2SC2458
	Q603,Q604	2SC2603
	Q605,Q606	2SC2705
	Q607,Q608	2SC3298
	Q701	2SC3377
	Q616	2SD438
	D701	D5SB20F
	D617	HZS12BL
	D702-D705,D707	S5566
	D711 Zener diode	UZ-13BS
	D708,D509,D510 Zener diode	UZ-6.2BS
	D501-D508,D601-D616,D618, D619,D706,D709,D710,D712, D713	1SS252

COILS & TRANSFORMER

Mark	Symbol & Description	Part No.
	L601,L602 AF Choke coil	ATH1004
⚠	T701 Power transformer	ATT1011

RELAYS

Mark	Symbol & Description	Part No.
	RY601	ASR-109
	RY701	ASR1024

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C717,C718 (0.01μF/AC125V)	ACG1003
⚠	C705-C707 (0.01μF/AC150V)	ACG1005
	C605,C606 (47p)	ACG1016
	C701,702 (8200/71)	ACH1071
	C611-614	CCCSL101K500
	C601,C602	CCMSL100D50
	C603,C604	CCMSL680J50
	C615,C616	CEANP010M50
	C623	CEASO10M100
	C710	CEASO10M50
	C714	CEAS100M25
	C708	CEAS102M16
	C704	CEAS102M25
	C503,C504,C709	CEAS330M16
	C703	CEAS332M25
	C618	CEAS4R7M50
	C711,C715,C716	CEAS470M16
	C712,C713	CEAS470M25
	C607,C608	CEAS470M50
	C617	CEAS471M6
	C619-C622	CFTXA823J50
	C609,C610	CKCYB472K50
	C501,C502	CKDYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR503,VR504 (10k)	VRTM6H103
	VR501,VR502 (50k)	VRTM6H503
⚠	R629,R630 (0.22μF)	ACN-146
⚠	R715 (2.2M)	ACN-208
⚠	R649,R650,R716	RD1/2PMF□□□J
⚠	R631-R634,R701,R703,R712	RD1/4PMF□□□J
	R601,R602,R605-R612, R619-R624,R635-R641,R643, R644	RD1/4PM□□□J
⚠	R625-R628,R647,R648,R603, R604	RFA1/4PS□□□J
	R646,R714	RS2LMF□□□J
	Other resistors	RD1/8PM□□□J

HEAD PHONE assembly

SWITCH

Mark	Symbol & Description	Part No.
	S601 Push switch (SPEAKERS)	ASG-413

RESISTORS

Mark	Symbol & Description	Part No.
	R651,R652	RS2LMF471J

OTHERS

Mark	Symbol & Description	Part No.
	Jack (HEAD PHONE)	AKN1010

SP OUT assembly

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 8P (SPEAKER)	AKE-111
	Mini jack (REMOTE OUT)	AKN-207

CONNECT assembly

No parts are supplied with the CONNECT assembly.

COMPLEX assembly (AWZ2292)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC203	AN7470P
	IC404	CXA1100P
	IC201	LA1265S
	IC202	LM7001
	IC406	M74LS05P
	IC301,IC304,IC402,IC405	NJM4558DXP
	IC303	TC4052BP
	IC401,IC403	TC4066BP
	Q210	JC501
	Q417	RN1201
	Q409,Q414	RN1203
	Q206,Q207	RN2201
	Q418	2SA1048
	Q208	2SC1740SLN
	Q401,Q402,Q405-Q408, Q410-Q413,Q415,Q416,Q421	2SC2458
	Q203,Q205	2SC2668
	Q202	2SC2786
	Q419,Q420	2SC3377
	Q204	2SK161
	Q201	2SK241
	Q209	2SK246
	Q403,Q404	2SK373
	D201,D202	ITT310
	D301 Zener diode	UZ-5.1BS
	D302 Zener diode	UZ-7.5BS
	D203-D206,D401-D407	1SS252

COILS & TRANSFORMERS

Mark	Symbol & Description	Part No.
	X202 Crystal resonator	ASS1005
	X201 Ceramic resonator	ATF-125
	T201 FM RF transformer	ATC-194
	T202 FM Coupling transformer	ATE-063
	T401 Bias OSC transformer	ATX1007
	L201 FM Coil	ATC1003
	L202 FM Detector coil	ATE-079
	L203,L204 Axial inductor (2.2μH)	LAU2R2M
	L403 Axial inductor (22μH)	LAU220K
	L401,L402 Axial inductor (220μH)	LAU221K
	L406,L407 Inductor (3.9mH)	LTA392J
	L404,L405 Inductor (8.2mH)	LTA822J
	F202,F203 FM Ceramic filter	ATF-107
	F201 FM Band pass filter	ATF-155
	F204 AM Ceramic filter	ATF-208
	F401,F402 Dolby filter	ATF-210

SWITCH

Mark	Symbol & Description	Part No.
	S401 Slide switch (BEAT CUT)	ASH1009

CAPACITORS

Mark	Symbol & Description	Part No.
	C470 (560p/630)	ACE1021
	C250 (470p)	ACE1039
	C226 (47p)	ACG1016
	C209,C227,C246,C305,C306, C413,C414,C482 (100p)	ACG1017
	C215 (1000p)	ACG1020
	C204,C208,C211,C218-C220, C235,C241,C247,C315,C316, C409,C410,C425,C426 (0.01μF)	ACG1021
	C221,C223,C224,C228-C230, C254 (0.022μF)	ACG1022
	C465,C466	CCCSL101K500
	C401-C404	CCCSL181J50
	C463,C464	CCCSL271K500
	C210	CCDCH010C50
	C207	CCDCH020C50
	C205	CCDRH180J50
	C477	CCDSL221J50
	C233	CCDSL271J50
	C216	CCDTH150J50
	C203	CCMCH040C50
	C214	CCMCH080D50
	C213,C217,C244,C245	CCMCH150J50
	C212	CCMCH330J50
	C405,C406	CCMSL100D50
	C248	CEANP2R2M50

Mark	Symbol & Description	Part No.
	C253	CEASR22M50
	C457,C458	CEASR33M50
	C459,C460	CEASR47M50
	C433,C434	CEASR68M50
	C255	CEASOR1M50

Mark	Symbol & Description	Part No.
	C232,C411,C412	CEAS010M50
	C242,C252	CEAS1R5M50
	C243,C432	CEAS101M16
	C237,C259,C260,C303,C304, C317,C318,C427-C430, C435-C438,C480,C481	CEAS2R2M50

Mark	Symbol & Description	Part No.
	C439,C440	CEAS220M16
	C251	CEAS3R3M50
	C206,C225,C231,C256,C263, C313,C314,C451-C454,C478, C479	CEAS330M16

Mark	Symbol & Description	Part No.
	C234	CEAS4R7M50
	C236,C264,C307,C308,C319, C320,C417,C418,C431,C471, C472	CEAS470M16
	C421,C422	CFTXA103J50

Mark	Symbol & Description	Part No.
	C222,C240,C423,C424	CFTXA104J50
	C449,C450	CFTXA123J50
	C473	CFTXA153J50
	C447,C448	CFTXA223J50
	C445,C446	CFTXA473J50

Mark	Symbol & Description	Part No.
	C468	CKCYB182K50
	C469	CKCYB222K500
	C475,C476	CKCYB472K50
	C261,C262,C474	CKCYB682K50
	C311,C312,C443,C444	CKCYB822K50

Mark	Symbol & Description	Part No.
	C249,C336,C441	CKCYF473Z50
	C419,C420	CKCYX333M25
	C238,C309,C310	CKDYB222K50
	C239,C442	CKDYF473Z50
	C257,C258	CKMYB152K50

Mark	Symbol & Description	Part No.
	C301,C302,C407,C408	CKMYB391K50
	C461,C462	CKMYB681K50
	C455,C456	CQMA562K50
	C415,C416	CQMA682J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR201 (4.7k)	ACP1024
	VR401-VR404 (10k)	VRTM6V103
	VR405,VR406 (20k)	VRTM6V203
	VR407,VR408 (500k)	VRTM6V504
	R307,R308	RD1/2PMF100J
	R335,R482,R485	RD1/2PM□□□J
	R263,R336	RD1/4PM□□□J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (ANTENNA)	AKA1009
	Pin Jack 6P (PHONO,VIDEO/ AUX,CD)	AKB1023
	DC Jack (PLAYER +12V)	AKN-203
	AMRF tuning block	AXX1011

MAIN VR assembly
SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC306	NJM4558DXP
	IC305	TA7291S

CAPACITORS

Mark	Symbol & Description	Part No.
	C325,C326 (47p)	ACG1016
	C321,C322	CCMSL330J50
	C327,C328	CEAS2R2M50
	C323,C324	CEAS221M10
	C329,C330	CEAS470M16
	C331	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR301 (100k)	ACX1023
	R351	RD1/2PM330J
	Others resistors	RD1/8PM□□□J

CONTROL assembly (AWZ2294)
SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC102-IC106	BA6144
	IC101	NJM4558DXP
	IC51	PDG037
	Q55,Q56,Q59,Q61,Q62	RN1201
	Q58	RN2201
	Q53,Q57	2SA1048
	Q51,Q54,Q60,Q101-Q110, Q113-Q119	2SC2458
	Q111,Q112	2SC2878
	Q52	2SD438
	D105 LED assembly	AEL1044
	D67,D68 LED	AEL1075
	D69-D74 LED	AEL1077
	D57 Zener diode	UZ-10BS
	D56 Zener diode	UZ-5.6BS
	D62	1SS145
	D51-D55,D58-D61,D63-D66, D81,D82,D101-D104	1SS252

SWITCHES

Mark	Symbol & Description	Part No.
	S51-S73 Tact switch	ASG1029

COILS

Mark	Symbol & Description	Part No.
	X51 Ceramic resonator	ASS1025
	L51 Axial inductor (33μH)	LAU330K

CAPACITORS

Mark	Symbol & Description	Part No.
	C119,C120 (470p)	ACG1019
	C115,C116 (1000p)	ACG1020
	C107,C108 (0.01μF)	ACG1021
	C142 (0.022μF)	ACG1022
	C51 (0.047μF/5.5)	ACH1070
	C136	CEASR22M50
	C101,C102,C133	CEASR33M50
	C58	CEASO10M50
	C146-C150	CEAS100M25
	C127	CEAS101M16
	C125,C126	CEAS2R2M50
	C59	CEAS220M16
	C54,C60,C130	CEAS330M16
	C52	CEAS470M10
	C128	CEAS470M16
	C105,C106	CFTXA124J50
	C140,C141	CKCYB272K50
	C145	CKCYB332K50
	C137,C138	CKCYB682K50
	C143,C144	CKCYB821K50
	C53,C57,C129	CKCYF473Z50
	C134,C135	CKCYX183M25
	C139	CKCYX333M25
	C131,C132	CKCYX473M25
	C117,C118	CKDYB332K50
	C111,C112	CKDYB392K50
	C55,C56	CKDYX104M25
	C113,C114	CKDYX153M25
	C103,C104,C109,C110	CKDYX393M25
	C121,C122	CKMYB221K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR111 (250k×2-B)	ACS1034
	VR101-VR110 (100k)	ACU1032
	R47-R50	RD1/2PM120J
	R59,R60,R100,R196-R199	RD1/4PM□□□J
	R64	RS2LMF390J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	V51 Fluorescent indicator tube	AAV-039
	2P Wire assembly	ADX1190
	REMOTE CONTROL SENCOR assembly	AXX1010

DECK SW assembly**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	D76 LED assembly	AEL1038
	D78 LED assembly	AEL1039
	D79,D80 LED	AEL1075
	D77 LED	AEL1077

SWITCHES

Mark	Symbol & Description	Part No.
	S74-S77 Tact switch	ASG1029

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

VR LED assembly**SEMICONDUCTOR**

Mark	Symbol & Description	Part No.
	D75 LED assembly	AEL1040

PATTERN assembly

No parts are supplied with the PATTERN assembly.

7.1.2 Electrical adjustments

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0dBv=1Vrms.
5. Connect a 50 kilo-ohm (or between 47 to 52 kilo-ohm) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
DOLBY NR :OFF
TAPE SELECTOR :NORM

Test Tapes

- STD-331B :Playback adjustments
(See Fig. 7-2)
- STD-608A :NORMAL blank tape
- STD-620 :CrO₂ blank tape
- STD-610 :METAL blank tape

List of Adjustments

PLAYBACK SECTION

1. Head azimuth adjustment.
2. Playback level adjustment.

RECORDING SECTION

1. Recording sections
2. Recording level adjustment.

NOTE: This unit has an automatic tape selection feature.

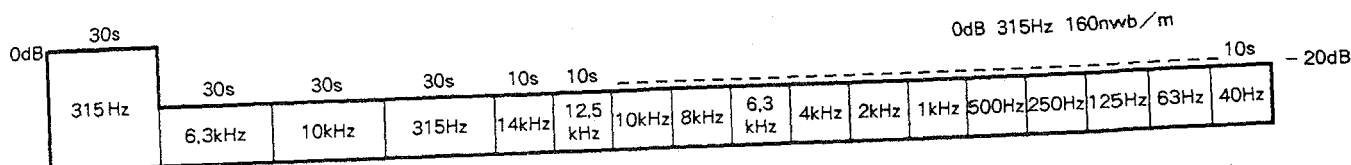


Fig. 7-2 Constants of the test tape STD-331B

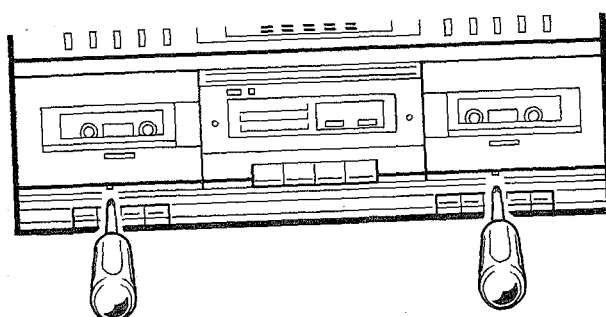


Fig. 7-3 Head azimuth adjustment

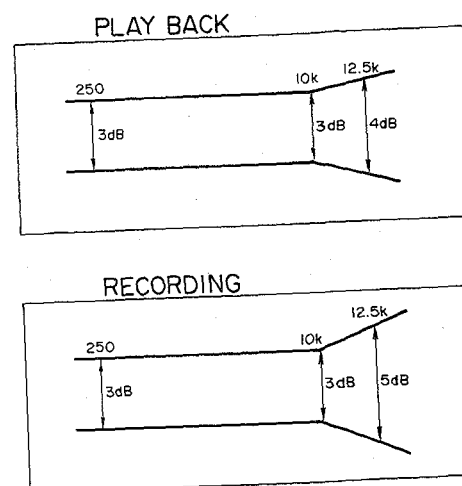


Fig. 7-4 Frequency response

DECK (PLAYBACK SECTION)

1. Head Azimuth Adjustment

- Turn VR, (Deck I) or VR, (Deck II) to mechanical center positions.

NO	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10kHz/−20dB section of STD-331B test tape.	Head azimuth adjustment screw. (See Fig. 7-3)	TP401 (L) TP403 (R)	Maximum playback signal level.	
2.	STOP	Lock the screw with scrwe lock after completing adjustment.				

2. Playback level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

NO	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315Hz/0dB section of the STD-331B test tape.	Deck I	VR403 (Lch) VR404 (Rch)	−5.2 dBv ±0.5 dBv	Adjust the playback level first at DESK I, and then at DECK II.
			Deck II	VR401 (Lch) VR402 (Rch)		

DECK (RECORDING SECTION)

1. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

NO	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.				
2.	REC	STD-630 (NORM) −20dB	Deck II	VR407 (Lch) VR408 (Rch)	LINE OUT TP401 TP403	0dB ±0.5dB (10kHz/315Hz)

2. Recording Level Adjustment

NO	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.				
2.	REC PAUSE	Apply a 315Hz/0dBv signal to the Line Input terminals.	Rec Level contorol	TP.401 (Lch) TP.403 (Rch)	−5.2 dBv	
3.		Set the DOLBY NR swtich to the ON position. (DOLBY B)				
4.	REC/PLAY	Record the above signal on-to the STD-630 test tape, and playback.	Deck II	VR405 (Lch) VR406 (Lch)	TP.401 (Lch) TP.402 (Rch)	−5.2dBv ±0.5dB
5.	STOP	Set the TAPE SELECTOR switch to the CrO ₂ position.				
6.	REC/PLAY	Record the above signal on-to the STD-620 test tape, and playback.	Confirm	TP.401 (Lch) TP.402 (Rch)	−4.5dBV ±2dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.				

7.2 TUNER SECTION

7.2.1 FM (MONO) Tuner adjustment

- Adjustment point are as shown in Fig. 7-1
- Make the wire connections as shown in Fig. 7-5
- Set the function to FM (MONO)

FM MONO

Item	Adjustment location	Measuring location	Adjustment value	Conditions
Sensitivity adjustment	T201	TP210 TP212	Max. voltage	Level at which the standard modulation of 98MHz does not saturate voltage of TP3
Tuning voltage check at 8.75 MHz	—	TP201	$3.5V \pm 1.5V$	—
Tuning voltage check at 108 MHz	—	TP201	$8.7V +1.3V$ $-2V$	—
T METER adjustment	L202	TP202 TP203	Voltage 0V difference $\pm 10mV$	Standard modulation at 98MHz 60dB

7.2.2 FM (STEREO) Tuner adjustment

- Adjustment point are as shown in Fig. 7-1
- Make the wire connections as shown in Fig. 7-5
- Set the function to FM (STEREO)

FM STEREO

Item	Adjustment location	Measuring location	Adjustment value	Conditions
MPX VCO Adjustment	VR201	TP205	$76kHz \pm 100Hz$	Non modulation at 98MHz 80dB μ V
Confirmation of distortion factor check	—	TP210, TP212	1.5% or less	Stereo modulation at 98MHz 60dB μ V
Distortion factor adjustment ※	T202	TP210, TP212	Min. distortion	Stereo modulation at 98MHz 60dB μ V

※ Perform the above adjustment only when the distortion factor check exceeds 1.5%.

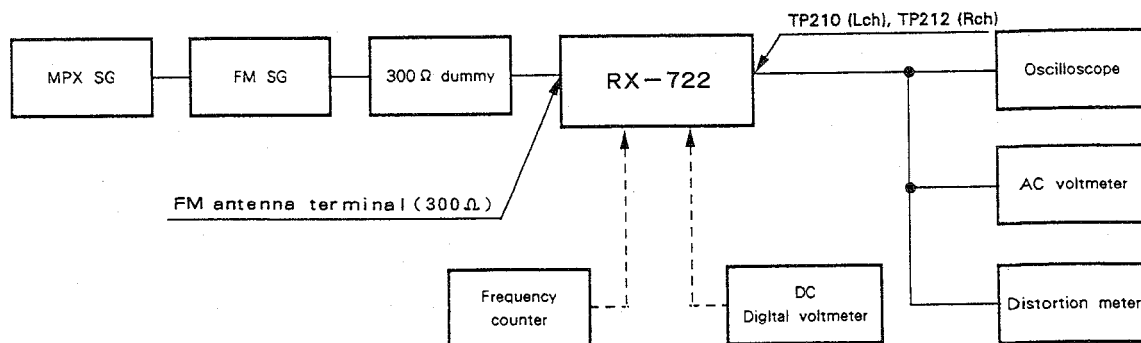


Fig. 7-5 FM adjustment wiring diagram

7.2.3 AM Tuner adjustment

- Adjustment point are as shown in Fig. 7-1
- Make the wire connections as shown in Fig. 7-6
- Set the function to AM

AM

Item	Adjustment location	Measuring location	Adjustment value	Conditions
TURND IND lighting level adjustment	R232	※ CN "TUNED"	60dBμV/m or less	Standard modulation at 1000 kHz.

※10kΩ are applied to the "TUNED" terminal (+B = 5V). TUNED IND lights up at "L" level.

NOTE: Separate the R232 if out of specification.

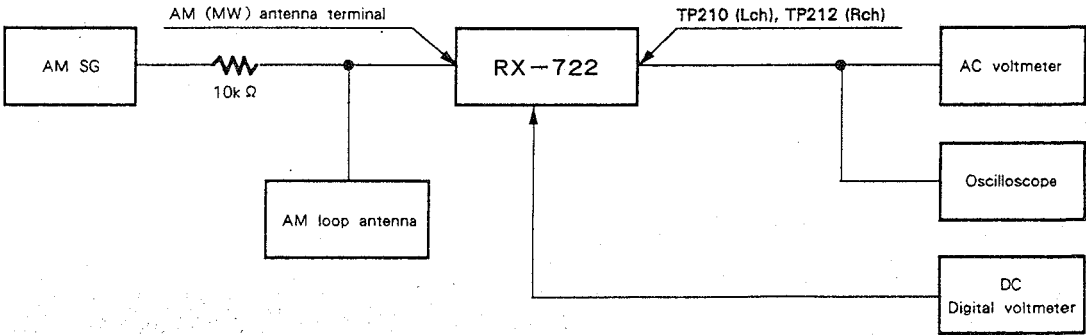
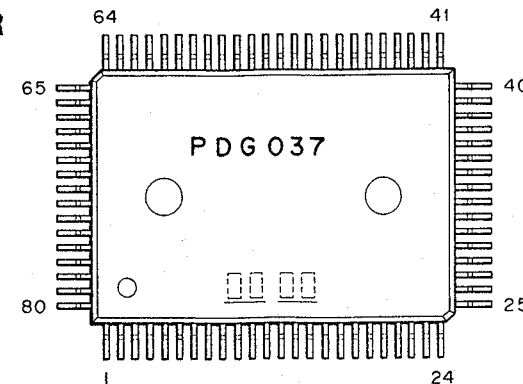


Fig. 7-6 AM adjustment wiring diagram

8. IC INFORMATION

<PDG037> SYSTEM CONTROL MICROCOMPUTER



1. Terminal Functions

No.	Name	I/O	P style	Function	LOGIC
1	S4/PG0	O	P	PB Nr × 2, CrO ₂	H: CrO ₂ playback or high speed copy with tape transport unit 1=normal
2	S5/PG1	O	P	PB CrO ₂ × 2	H: high speed copy with tape transport unit 1=CrO ₂
3	S6/PG2	O	P	tape transport unit 2	L: tape transport unit 2=REC
4	S7/PG3	O	P	PLAY/REC	H: tape transport unit 2=PLAY
				PLAY selection from tape transport units 1 and 2	L: tape transport unit 1=PLAY
					H: tape transport unit 2=PLAY
5	S8	O	P	Key output	
6	S9	O	P	Key output	
7	S10	O	P	Key output	
8	S11	O	P	Key output	
9	S12	O	P	Key output	
10	S13	O	P	Key output	
11	S14	O	P	Key output	
12	S15	O	P	Key output	
13	S16/T15	O	DP	FL segment a	
14	S17/T14	O	DP	FL segment b	
15	S18/T13	O	DP	FL segment c	
16	S19/T12	O	DP	FL segment d	
17	S20/T11	O	DP	FL segment e	
18	S21/T10	O	DP	FL segment f	
19	S22/T9	O	DP	FL segment g	
20	S23/T8	O	DP	FL segment h	
21	T7	O	DP	Unused (open)	
22	T6	O	DP	Unused (open)	
23	T5	O	DP	FL grid 1	
24	T4	O	DP	FL grid 2	
25	T3	O	DP	FL grid 3	
26	T2	O	DP	FL grid 4	
27	T1	O	DP	FL grid 5	
28	T0	O	DP	FL grid 6	
29	INT	I	C	switchover	L: MW9kHz, FM50kHz H: MW10kHz, FM100kHz
30	XTAL	O	C	Clock pulse output	
31	EXTAL	I	C	Clock pulse input	
32	RST	I	C	Reset	L: Reset
33	NC				
34	V _{DD}	I		Supply voltage	
35	PI0/AD0	O	C	VIDEO	H: FUNC=VIDEO
36	PI1/AD1	O	C	TUNER	H: FUNC=TUNER
37	PI2/AD2	O	C	DOLBY IND	H: DOLBY IND light up = DOLBY ON
38	PI3/AD3	O	C	SW INH	H: Scanning in progress with FUNC=TAPE or FUNC=TUNER
39	PB0/AD4	I	C	Key input 0	
40	PB1/AD5	I	C	Key input 1	

No.	Name	I/O	P style	Function	LOGIC
41	PB2/AD6	I	C	Key input 2	
42	PB3/AD7	I	C	Key input 3	
43	NC				
44	PX0/SC	O	C	Serial clock pulse output	
45	PX1/SO	O	C	Serial data output	
46	PX2/SI	I	C	Auto stop input	L: Auto tuning stop
47	PA0	O	C	Deck SW output 0	
48	PA1	O	C	Deck SW output 1	
49	PA2	O	C	REC IND	L: REC IND light up
50	PA3	O	C	REC CrO ₂	H: Tape transport unit 2 = CrO ₂
51	PF0	O	C	POWER Relay	H: Relay ON
52	PF1	O	C	LM7001 CE	H: Enable
53	PF2	O	C	Function SW control A	H: FUNC = PHONO or FUNC = TUNER
54	PF3	O	C	BIAS OSC	H: ON = BIAS OSC
55	PE0	O	C	DOLBY MODE	L: DOLBY ON
56	PE1	O	C	MOTOR 1	H: tape transport unit 1 MOTOR ON
57	PE2	O	C	MOTOR 2	H: tape transport unit 2 MOTOR ON
58	PE3	O	C	TAPE SPEED	L: High speed copy in progress
59	PY0	O	C	VOLUME DOWN	H: Motor volume DOWN
60	PY1/PWM	O	C	VOLUME UP	H: Motor volume UP
61	PY2/WP	I	C	Power failure detection	
62	PY3/EC/RMC	I	C	Remote control signal input	
63	PD0	O	C	×2 COPY IND.	L: ×2 COPY IND light up
64	PD1	O	C	×1 COPY IND.	L: ON = ×1 COPY IND light up
65	PD2	O	C	PAUSE IND.	L: PAUSE IND light up
66	PD3	O	C	PHONO	L: FUNC = PHONO
67	PC0	O	C	CD	L: FUNK = CD
68	PC1	O	C	VOLUME IND.	L: VOLUME IND light up
69	PC2	O	C	STANDBY IND.	L: STANDBY IND light up
70	PC3	O	C	TAPE	L: FUNC = TAPE
71	V _{SS}	I		GND terminal	
72	TX	O	C	Unused	Open
73	NC				
74	TEX	I	C	Unused	Connected to GND
75	V _{REF}	I		Reset standard voltage	Connected to V _{DD}
76	V _{FDP}	I		Power terminal for FL	
77	S0/PH0	O	P	MUTING	L: MUTING ON (Signal OFF)
78	S1/PH1	O	P	REC MUTE	H: MUTING ON (Signal OFF)
79	S2/PH2	O	P	PB MUTE	L: MUTING ON (Signal OFF)
80	S3/PH3	O	P	PROTECTION RELAY	H: RELAY ON

C: CMOS I/O

P: Pch open drain output

DP: Pch open drain output with pull-down resistor

9. SPECIFICATIONS

Amplifier Section

[RX-522]

Continuous Average Power Output is 110 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09%** total harmonic distortion.

[RX-722]

Continuous Average Power Output is 125 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09%** total harmonic distortion.

[RX-522/RX-722]

Input (Sensitivity/impedance)

PHONO MM 2.5 mV/47 k Ω
CD, VIDEO/AUX 150 mV/47 k Ω

Frequency Response

PHONO MM 20 Hz to 20,000 Hz $\pm$ 2 dB
CD, VIDEO/AUX 20 Hz to 50,000 Hz $\pm$ 3 dB

Signal-to-Noise Ratio (IHF, short circuited, A network)

PHONO MM 72 dB
CD, VIDEO/AUX 90 dB

Graphic Equalizer frequency band

..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, $\pm$ 8 dB

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.

** Measured by Audio Spectrum Analyzer.

FM Tuner Section [RX-522/RX-722]

Frequency range 87.5 MHz to 108 MHz
Usable Sensitivity 14.2 dBf, IHF (1.4 μ V/75 ohms)

50 dB Quieting Sensitivity Mono: 20 dBf (2.7 μ V/75 ohms)

Signal-to-Noise Ratio (IHF, 85 dBf Input) Mono: 70 dB
Stereo: 67 dB

Stereo Separation 43 dB(1 kHz)

Frequency Response $\pm$ 1 dB (20 Hz to 15 kHz)

Antenna Input 75 Ω unbalanced
300 Ω balanced

AM Tuner Section [RX-522/RX-722]

Frequency range

When 10 kHz step 530 kHz to 1,700 kHz

When 9 kHz step 531 kHz to 1,602 kHz

Sensitivity (IHF, Loop antenna) 385 μ V/m

Antenna Loop Antenna

Cassette Tape Deck Section [RX-522/RX-722]

Systems 4 track, 2-channel stereo

Heads Recording/playback head $\times$ 1

Playback head $\times$ 1

Erasing head $\times$ 1

Motor DC servo 2 speed motor $\times$ 2

Wow and Flutter No more than 0.13% (WRMS)

Fast Winding Time Approximately 105 seconds
(C-60 tape)

Frequency Response

-20 dB recording:

Normal tape 35 Hz to 14,000 Hz $\pm$ 6 dB

CrO₂ 35 Hz to 15,000 Hz $\pm$ 6 dB

Signal-to-Noise Ratio

Dolby NR OFF 50 dB

Noise Reduction Effect

Dolby B type NR ON More than 10 dB (at 5 kHz)

Miscellaneous [RX-522/RX-722]

Power requirements

U.S. and Canadian models AC 120 Volts, 60Hz

Australian model AC 240 Volts, 50/60 Hz

Other destination model

..... AC 110 V/120-127 V/220 V/240 V (switchable),
50/60 Hz

Power Consumption

RX-522 380 W, 495 VA

RX-722 380 W, 495 VA

Dimensions 420(W) $\times$ 349.5(H) $\times$ 303(D) mm

16-9/16(W) $\times$ 13-3/4(H) $\times$ 11-15/16(D) in

Weight (without package)

RX-522 9kg (19 lb 14 oz)

RX-722 10kg (22 lb 1 oz)

Furnished Parts [RX-522/RX-722]

FM T-type Antenna 1

AM Loop Antenna 1

Operating Instructions 1

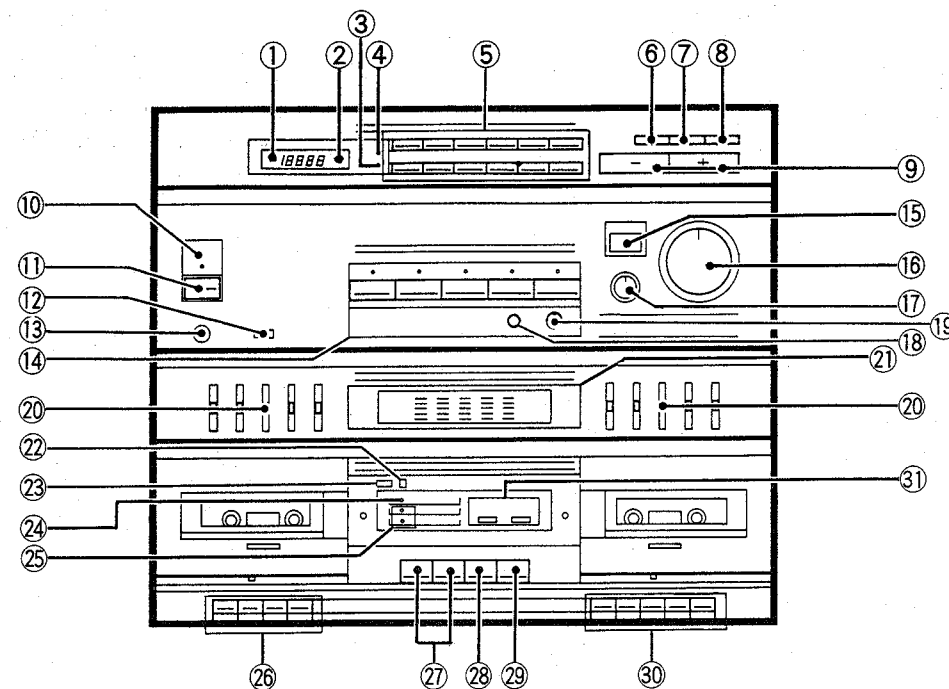
Remote control unit 1

Dry cell batteries [AAA(R03)] 2

Multi-voltage and Australian models:

Operating instructions for the remote control unit 1

10. PANEL FACILITIES



TUNER SECTION

① FREQUENCY/station number display

② FM MONO indicator

Lights when the FM MONO switch is pressed to select monaural FM reception.

③ STEREO indicator

This lights during FM stereo reception

④ TUNED indicator

This lights to indicate that a station has been optimally tuned in.

⑤ STATION CALL switches

These are used to recall preset broadcasting stations and to preset the station.

⑥ MEMORY switch

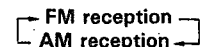
This switch is used to memorize stations. When the switch is pressed, the FREQUENCY indicator will flash. To memorize the frequency of any station, press one of the STATION CALL switch while the frequency indicator is flashing.

⑦ FM MONO switch

Normally, the FM MONO indicator remains off. However, it may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press the switch to set the reception to the monaural mode (FM MONO indicator lights) and tune in the station. The program of an FM stereo broadcast will be heard in mono. This switch will not function for AM reception. The FM MONO setting is memorized along with station frequency when presetting a station.

⑧ BAND selector switch (FM/ AM)

This is used to select the band of the desired station. The bands change alternately each time the switch is pressed.



⑨ TUNING switch (—, +)

These are used to locate stations. Push the "—" switch to locate a station broadcasting on a lower frequency and the "+" switch to locate a station broadcasting on a higher frequency.

AMPLIFIER SECTION

⑩ STANDBY/SLEEP indicator

This indicator lights in standby status or when the sleep timer function is operating when the power cord is connected to a power outlet.

When the SLEEP key on the remote control unit is pressed, the sleep function activated for approximately 60 minutes, then enters the standby mode. (The STANDBY/SLEEP indicator flashes faster as the end of the set time nears.)

⑪ POWER (STANDBY/ON) switch

When this switch is set to the ON position, the STANDBY/SLEEP indicator goes out and power is supplied to the main circuits of the cassette tape deck receiver. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet.

Disconnect the power cord from the power outlet when you do not plan to use the cassette tape deck receiver for a long period of time.

The cassette tape deck receiver has a backup function, so it will return to the original status when the power cord is unplugged and soon again plugged into the power outlet.

⑫ SPEAKERS switch (A, A+B)

This is used to select the speaker through which you wish to listen.

A: When the speakers connected to A terminals are in use.

A+B: When the speakers connected to A and B terminals are in use.

(There is no sound at this position when speakers are connected only to the A terminals.)

Be sure to use A terminals when you use a pair of speakers only. No sound will be heard through the speakers when only a pair of speakers are connected to B terminals.

⑬ PHONES jack

This is a "standard plug-type jack" for headphones.

NOTE:

Sound is not heard from the speakers when headphones are in use.

⑭ FUNCTION switches/indicators

The indicators light for the specified functions.

⑮ REMOTE SENSOR window**⑯ VOLUME control/indicator**

The volume is increased when this control is turned clockwise, decreased when turned counterclockwise. When operating with the remote control unit, the control automatically turns clockwise when "+" is pressed, counterclockwise when "-" is pressed, and the indicator on the VOLUME control flashes rapidly.

The indicator also flashes when the muting function is operated by the remote control unit.

⑰ BALANCE control

Usually set this control to the central position. If turned counterclockwise, the volume of the right channel will decrease. If turned clockwise, the volume of the left channel will decrease.

⑱ MIC jack (excluding U.S. and Canadian models)

Used to connect microphones equipped with standard plug.

⑲ MIXING LEVEL (excluding U.S. and Canadian models)

Adjusts the volume of the microphone.

Increasing the microphone volume reduces the source volume.

GRAPHIC EQUALIZER SECTION**⑳ GRAPHIC EQUALIZER controls****㉑ SPECTRUM ANALYZER display****CASSETTE TAPE DECK SECTION**

- The cassette tape deck receiver is provided with an automatic tape selector function.

Deck I NORMAL/CrO₂, METAL

Deck II NORMAL/CrO₂

㉒ DECK I TAPE COUNTER RESET switch**㉓ DECK I TAPE COUNTER**

3-digital display measures tape travel on deck I.

㉔ DOLBY NR indicator**㉕ COPY MODE indicators****㉖ Deck I switches**

▶ (PLAY) Playback.

◀◀ (REW) Rewind

▶▶ (FF) Fast forward

■/▲ (STOP/EJECT) Stops tape travel. Ejects cassette if pressed when tape is stopped.

㉗ COPY MODE switches

These switches are used to select the copy mode.

HIGH High speed copying (double-speed, halftime copying)

NORMAL Normal speed copying

NOTE:

When the COPY MODE indicator is blinking (copy standby mode) the playback operation is not available for only DECK I or only DECK II, and the recording operation is not available for DECK II only.

㉘ DOLBY *NR switch

Press to activate noise reduction system. Use to play back tapes recorded using Dolby B NR.

- Tapes recorded using Dolby B NR should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby B NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

*

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

㉙ Deck II PAUSE (||) switch

This switch is used to temporarily stop the tape in deck II. The PAUSE indicator lights during the pause mode. The pause mode is cancelled when the switch is pressed again. The PAUSE switch will not function while copying a tape.

㉚ Deck II switches

● (REC) Set to the recording mode.

▶ (PLAY) Playback

◀◀ (REW) Rewind

▶▶ (FF) Fast forward

■/▲ (STOP/EJECT) Stops tape travel. Ejects cassette if pressed when tape is stopped.

㉛ DECK II MODE indicators

REC (●) Lights during recording

PAUSE (||) Lights during the pause mode.

MIC MIXING

(excluding U.S. and Canadian models)

MIXING KNOW-HOW

Mixing involves combining the signals from two input sources (a microphone and a tape, for example)

SINGING ALONG WITH A PROGRAM SOURCE

Operate after setting the MIXING LEVEL control to MIN.

- Perform the preliminary operations on page 9.
- Plug a microphone into the MIC jack.
- Adjust the volume to a suitable level.
- Set the MIXING LEVEL control to the center position. If howling occurs (a high-pitched sound from the speakers), take the following steps.
 - Move the microphone away from the speakers.
 - Lower the volume.
- Select the desired program source using the FUNCTION switches.
- Start playback of the program source.
- Adjust the overall volume.
- Using the MIXING LEVEL control, adjust the sound balance between the microphone and the program source.
- Sing along with the program using the microphone.

NOTE:

- Recording of mixed sound is possible. Although the sound from the speaker during playback of Deck I will be mixed sound, recording to Deck II will be made by tape sound of the Deck I only.
- When not using the MIXING function, be sure to set the MIXING LEVEL control to MIN and remove the microphone plug from the MIC jack.
- The graphic equalizer does not affect the sound of microphone.